The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLIII. CHICAGO, ILLINOIS, AUGUST 13, 1904. No. 7.

Original Articles.

THE PERMANENT PRESERVATION OF ANATOMIC, EMBRYOLOGIC, PATHOLOGIC AND BACTERIOLOGIC SPECIMENS.

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In teaching by modern laboratory methods, nothing is more important than the artistic and accurate preservation of material in such a manner as to retain permanently the natural colors and secure mounts that conveniently can be labelled, handled and exhibited. The old methods, yielding uncolored, bulky masses, possessing, save in form, little resemblance to the original, gave most unsatisfactory results, and hence museums more than five or ten years of age no longer meet the requirements of to-day. The specimens I exhibited at the Atlantic City Session of the Association received such flattering notice, and so many have written for the details of the method, that it seems desirable to publish in full the various steps necessary to attain the results shown. Except in minor details (which are essential), the method makes no claim to originality; it is the assembling of what seemed the best in several methods, published and unpublished, and still is replete with possibilities that have not been worked out. Undoubtedly the method could be applied to the preservation of botanic specimens, but having no facilities for experiment in this direction I have not attempted to adapt it to that purpose.

The method is based on the well-known Kaiserling process, and the permanent preservation in gelatin is but a modification of the old glycerin-jelly medium, long a standard agent with microscopists. Much of the detail requiring experiment has been worked out by Dr. John Funke, to whose patience and care the beautiful results obtained are largely due. Petri dishes, mounted on glass plates, were first brought to my attention by Dr. S. W. Sappington, who used ground glass, which obscured one side of the specimen, but nevertheless yielded very beautiful results.

Dr. H. E. Radasch, associate in embryology in the Jefferson Medical College, has worked out the technic of attaching letters to the specimen so that the label may be made descriptive, like the legends in our text-books. My secretary experimented with various typewriter ribbons, and eventually found that the stock article called "The Record Ribbon" met all requirements.

THE FIXATION FLUID.

The agents used in the preliminary treatment of anatomic specimens are (1) the fixation fluid, (2) the developer, and (3) the final preservative, and for these purposes I have utilized the generally accepted fluids of the Kaiserling method. The fixation fluid is composed of

Formalin (any 40 per cent. aqueous solution of formaldehyd gas serves equally well)	250 c.c.
Potassium nitrate	10 gms.
Potassium acetate	30 gms.
Water	1,000 c.c.

The salts are dissolved in the water and the formalin is then added. It is desirable, but not strictly necessary, that the salts be chemically pure; a good commercial article gives satisfactory results, but many specimens of the salts contain iron, and even traces of this metal portend disaster. For this reason no metal is permitted to come in contact with the solution or the specimens during any stage of their preparation; the only exception to this rule has been the occasional use of lead for weighting down such organs as lungs and also lipomata and other tissues that tend to float, but even for this purpose pieces of tile, brick or crockery are better. The mixture is made in fifteen-gallon jars, with lips and lids of the form commercially used for the preservation of sauerkraut.

THE DEVELOPER AND THE PRESERVATIVE.

The developing fluid is alcohol. Most writers (including Kaiserling) recommend two strengths, an 80 per cent. and a 95 per cent., but we use only the ordinary commercial article. So far as we can observe, methyl alcohol possesses no advantages.

The final preservative, in its liquid form, has the following formula:

Acetate of potassium	200 gms.
Glycerin	400 c.c.
Water	2,000 c.c.

The acetate and glycerin are thoroughly mixed and the water added. The order is probably of little importance in the preparation of either this or the fixation fluid, but in the latter one wishes to delay the addition of formalin as long as possible, as it is quite impracticable to stand over and stir the mixture after the formaldehyd is added. One word with regard to the water: Possibly distilled water is best, but some tap waters might be used; water from any mechanical filter using alum can not be trusted. Filtration of the fixation fluid is unnecessary; the preservative should be filtered through a thick pad of cotton placed at the bottom of a large funnel or percolator. As soon as the final fluid is prepared a lump of thymol (about 15 to 20 gms.), large enough to be seen and easily handled, is placed in the container, and each vessel of the final preservative should contain a piece of thymol sufficiently large to be picked out or left in the vessel when the fluid is poured out or used. When specimens are permanently preserved in this solu-

tion, a lump of thymol should be kept in the jar to prevent the growth of fungi.

THE GELATIN MEDIUM.

The solid medium in which the preparations are finally preserved is a 10 per cent. solution of gelatin in the acetate of potassium, glycerin and water mixture. This is prepared by soaking the requisite amount of gelatin in the mixture for 12 to 24 hours; the container is then placed on a water bath or in flowing hot water until the gelatin melts; this takes but a short time. The mixture is rendered decidedly acid to litmus by the addition of acetic acid, about 4 c.c. to the liter, and clarified by the use of egg albumin, exactly as in preparing gelatin media. Acetic acid favors complete coagulation of the albumin, tends to make the gelatin clearer, and, as originally suggested by Williams, acidity seems to assure better color preservation. The broken shells and whites of four eggs should be used for each liter of the mixture. After filtration the prepared medium is bottled and placed on ice until solid, and then a large crystal of thymol is thrown on top of the solidified gelatin and the container stoppered. Prepared in this way, the medium keeps until needed. When wanted, the crystal of thymol is removed with forceps and the gelatin liquefied at a low temperature. The thymol should be taken out before warming the gelatin, otherwise it evinces a tendency to fragment, melts or is dissolved in such quantity that, when the fluid is cooled, a precipitate forms, rendering the medium gravish and slightly opaque. It is well known by bacteriologists that gelatins differ, and we have found at least one kind that can not be cleared satisfactorily. The preparation that has given us the best results is that known commercially as "W. H. No. 1,866." Some gelatins seem to contain a masked coloring which causes the finished preservative to appear decidedly red; it should be a light straw color and perfectly transparent. Care is necessary to exclude iron, and hence the gelatin should be made in glass beakers or porcelain vessels; new agateware free from cracks or shales may be employed, but it is so untrustworthy that time and patience are saved by avoiding it. I have not tried copper, but judge the excess of acetic acid would render its use risky.

THE SPECIMEN.

It is of the highest importance that the material to be preserved shall be received in a proper condition. Freshness is a prerequisite; when the blood has begun to yield its coloring matter and imbibition has tinged the specimen, only a motley result can follow. Our results with specimens that have been frozen or iced for any time, even if the colors at the beginning of the process seemed good, have not been satisfactory. Nothing shows this better than a pair of kidneys received fresh from an autopsy; one carried through immediately, and the other iced or kept in the refrigerator until the next day, when its preparation is begun; when obtained the organs may have appeared identical; after preparation the resemblance is superficial. The influence of blood imbibition (I use this term for combined hemolysis and hemoglobin diffusion as the hackneyed expression of the autopsy room) is such that a specimen left in a pan or on a plate containing a little blood-stained fluid will carry the markings of the latter to the end. If fixation at once is not practicable, rinse off the blood stains and wrap the specimen in sufficient gauze, or a number of towels, to absorb any fluid that may escape; the fact that fluid escapes is proof that something is being lost, and it is attention to just such details that assures success.

THE ORIENTATION.

This is a most important step. The specimen is arranged, posed or oriented just as it is to appear when mounted; during fixation the stiffening action of the formalin gives a permanent shape even to such thin specimens as the intestine, and readjustment of such organs as the heart, lung, kidney or bladder becomes impossible. In this orientation every thread tied across the specimen will leave its mark, and each hole made will show; iron (tacks) can not be used, and even the slender entomologic pins leave small black holes; white thread (linen) is best; for pinning, wooden or quill toothpicks may be used. A number of cork blocks, 25 cm. square and 3.5 cm. thick, are especially useful for attaching and holding organs in position; intestine and other membranous specimens may be wound around such a block. The disadvantage of cork is the weight necessary to sink it, but even with this drawback it is better than glass. If both sides are to show, it is best to sew the specimen in a glass frame arranged for permanent mounting. If spread on cork or glass, four layers of thick, tough filter paper free from lint should be interposed between the specimen and the cork or glass. Cotton serves as well, but fixes tightly to albuminized surfaces; towels and cheesecloth are prone to mark the specimen with a screen effect. The cork, with the attached specimen turned downward, is thrown in the fixation fluid, and a brick placed on the top submerges the specimen and part of the cork. Care should be taken that the center of the specimen does not fall away from the cork; this can be prevented by obliquely placed toothpicks. Although highly recommended, we have not resorted to injection through the blood vessels, but for very large masses or the fixation of organs like the brain and liver it might be highly advantageous. Cysts, hydronephrotic kidneys, unopened intestine, stomach and other specimens containing cavities may be distended with the fixation fluid and sectioned later.

The formalin solution accomplishes more than one purpose. It fixes the specimen; I presume fixation is a coagulative process, at least in part, but it is more; the exact nature of the chemical change I shall not discuss at this time. The specimen stiffens, blanches, and becomes more or less friable and inelastic; the color changes appear to have ruined the mount. The fluid not only fixes, but also sterilizes the specimen, and, although surface color and contour may be preserved by surface fixation, penetration is necessary for satisfactory permanent preservation. For this reason a change to a second container of the fixation fluid is advised. The cork block or other retentive device is no longer needed, and in the second jar the specimens are packed lightly with towels or cotton at the bottom and interposed between. As soon as the first formalin solution becomes soiled it is thrown out, the second is moved back to become the first, the emptied container is washed and filled with fresh solution and replaces the second jar, now moved back to become the first. The solutions may be used repeatedly, provided specimens containing bile are excluded. Sometimes bile-stained specimens turn very green, all other colors being thereby obscured; such organs, usually livers, greatly discolor all the fluids into which they are placed. In preserving livers it is well to wash the bile from the gall bladder and rinse the surface of the organ thoroughly. I would advise, under all circumstances, that specimens of liver be carried through separately, as there is no way by which one can foretell how much bile-staining may result; some-

times no green tint develops, and beautiful color differentiations are obtained; we have no finer specimens than some of red atrophy put up over a year ago.

The most puzzling and unanswerable question, and at the same time an exceedingly important one, is how long must the formalin act? This depends entirely on the size and consistency of the specimen. A piece of stomach, intestine, diaphragm or other membrane will have fixed fully after three hours in each of the two formalin solutions. Half of a kidney should be left at least twelve hours in each solution, and a brain twenty-four hours in each solution. Prolonged immersion in the fixative solution may render development of the color impossible, but on the other hand under-fixation is sure to leave the blood coloring matter soluble, so that it washes out or diffuses in the later handling. Large specimens, such as brains, livers, and even kidneys, if not sectioned when placed in the first solution should be freely incised, or, better, cut into slabs 4 to 8 cm. in thickness before entering the second fixing solution.

THE WASHING OUT.

The next step is getting rid of the excess of fixation fluid. This is accomplished by washing in running water for fifteen to twenty minutes, after which the specimen is transferred to the first alcohol. In my estimation the success of the process depends on the care and judgment exercised in the development of colors in the alcohol. The process should always begin in the morning, as I know of no safe criterion by which it is possible to foretell the length of time that will be necessary, and, as daylight is essential to watching the evolution of color, late afternoon and evening hours must be avoided. The excess of water is mopped off and the specimen completely submerged in commercial alcohol (94 per cent.); the color begins to appear in a few minutes, and as soon as it is fairly under way the tissue should be transferred to the second alcohol, and when restoration of color is complete the organ is quickly drained and submerged in the final preservative. When the restoration of color is complete fading begins, progresses rapidly, and, once the color is lost in alcohol, I know of no way by which its return can be secured; hence the process must be watched carefully. The stay in alcohols is also influenced by the future treatment to which the specimen is to be subjected. If it be a membrane, like a piece of intestine, even twenty minutes to a half hour for the two alcohols may be excessive; on the other hand, if it be a slab of an organ, the surface of which can be shaved down to the point where the alcohol has penetrated just to the proper degree, less care is necessary and over-development less likely to prove disastrous. As soon as the color is restored further action of the alcohol must be arrested by immersing the specimen in the first container of the potassium acetate, glycerin and water mixture, where it should be fully submerged and allowed to remain for the same length of time that it was in the alcohols, after which it is transferred to the second jar of the same fluid in which the preservation may be permanent, or after one or two weeks, preferably sooner, the mount is completed in formalin-glycerin-gelatin. The first and second alcohols and the final preserving fluid are changed from time to time in the same way as already directed for changing the fixation fluid; sooner or later the first alcohol gives off strongly the odor of formalin, and the first preservative yields the odor of alcohol, when both should be changed. The method of changing suggested is the most economical, but probably is not so good as the complete renewal of all solutions; however, we have found the way advised efficient.

Specimens prepared as suggested preserve their color fairly well; to a large degree the permanency depends on the freshness of the material. Most observers lay great stress on the necessity of excluding light; probably darkness is better, but the chief difficulty lies in the macerating and solvent action of any solution, and to avoid these dangers a permanent solid medium is to be recommended, and for this purpose formalin-glycerin-gelatin is almost ideal.

FORMALIN-GLYCERIN-GELATIN MOUNTS IN PETRI DISHES.

The pieces of plate glass and Petri dishes used in preparing the mounts vary in size. The largest Petri dish that we have used is 20 cm. in diameter and requires a plate glass 9 by 11 inches. The following table gives the sizes of Petri dishes and glass plates necessary for all ordinary purposes; the conversion of the metric measurements to inches is approximate:

Petri Dishes.	Plate Glass.
20 cm	22.5x27.5 cm., 9x11 inches
15 cm	20.0x22.5 cm., 8x 9 inches
12 cm	20.0x22.5 cm., 8x 9 inches
10 cm	12.5x17.5 cm., 5x 7 inches
8 cm	12.5x17.5 cm., 5x 7 inches
6 cm	10.0x12.5 cm., 4x 5 inches
5 cm	7.5x10.0 cm., 3x 4 inches

The thickness of the plate glass is important, as thin pieces are often bent in handling, and any spring tends to loosen the attached dish. No matter what the surface dimensions, I am strongly convinced that the glass should not be less than one-fourth inch, and, better, three-eighths inch in thickness; a greater thickness might be desirable, but would add materially to the bulk and weight. The Petri dishes should be free from bubbles or rings, and when placed with the edge on plate glass should not rock, thus showing that the edge is true. The specimen to be mounted is placed in the dish, and this is filled with final preservative for the purpose of ascertaining the quantity of gelatin that will be needed to complete the mount. We will say that this is found to be 100 c.c. Take 120 c.c. of the prepared gelatin, liquefied, and pour about one-half into the Petri dish, which must be thoroughly cleansed; place the specimen in this, carefully excluding air bubbles, and press it close to the bottom of the dish, using a light tile or glass weight if necessary. Even when every care is taken gelatin poured from one vessel to another tends to froth or form small bubbles which, after congelation, are difficult to remove; wherever such a bubble forms, it should be sucked up in a medicine dropper while the medium is still fluid. When properly oriented, dish and contained specimen are set aside in order to solidify the gelatin, using an iced chamber or the refrigerator, if the temperature of the room is too high. The mount may be left in this condition for several hours if desired, or mounting may be completed as soon as the gelatin is solid. Prolonged or too great cooling may cause corrugation of the surface, retraction from the sides of the dish, and permits less perfect fusion of the gelatin added later, and for these reasons is not recommended.

To complete the mount, pour on the solidified medium sufficient formalin to render the contained gelatin 0.75 per cent. formalin when the mount is completed. For example: If 100 c.c. of gelatin is necessary, 0.75 c.c. of formalin should be poured on the solidified layer. Fill the dish with the remainder of the gelatin, and place it on a piece of glass resting on the table in such a way that both can be picked up readily; while in this position put in place the glass plate that is to cover the Petri

dish. As soon as the plate is in the desired position, grasp the mount between the two glass plates, turn it over quickly, and run a ring of gelatin around the junction between the plate and the dish. This is necessary because as the gelatin solidifies it contracts, and in the absence of an excess at the line of contact between plate and Petri dish, such contraction may permit the entrance of air. Set the dish aside for a few hours (over night or longer), until the gelatin is completely set. Run a knife around the Petri dish, holding it parallel with the side of the dish, thus cutting the gelatin loose from the side; the excess may readily be stripped off. Wash the plate quickly in cold water, dry rapidly, and with a dropper run a thin band of gelatin containing 1 per cent. formalin around the line of contact between the Petri dish and the glass plate. This will quickly set, and in a day or so may be painted over with xylol balsam applied either with a brush or dropper; the first layer of balsam should be thin. As soon as the balsam ceases to be sticky to the finger, a second coat is applied, and this should be repeated until a sufficiently thick rim has been made. I have no doubt that a turn-table would be convenient for the application of the gelatin and balsam rings, but we have not found such an appliance necessary. It has been suggested that the initial gelatin ring might be chromicised by the addition of bichromate of potassium, or by painting it over with a bichromate solution after it has solidified. A number of cements, including Bell's cement, asphaltum and gold-size, have been tried, but seem to possess no special advantages.

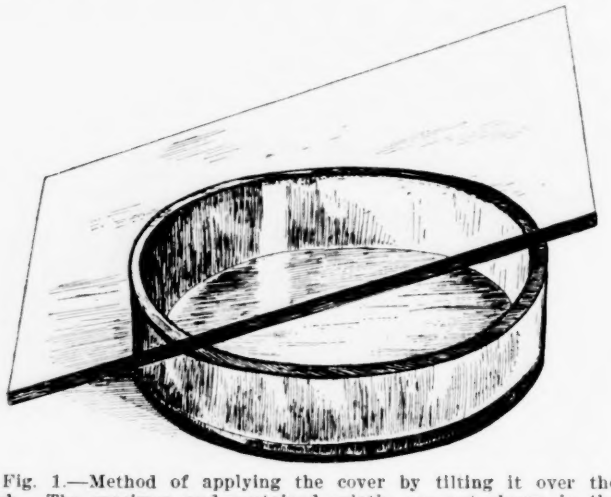

Fig. 1.—Method of applying the cover by tilting it over the dish. The specimen and contained gelatin are not shown in the illustration.

The most difficult part of the procedure is adjusting the glass plate on top of the Petri dish in such a way as to prevent the entrance of air at the time the mount is made. In the accompanying sketches (Figs. 1 and 2) an attempt is made to show how the plate cover is applied; one method is by tilting it in position, and the other by sliding it over the dish. By the latter method a slight band of gelatin is kept ahead of the advancing plate, thereby preventing the entrance of air. Dr. Funke, who has been most successful in the preparation of these specimens, likes this method for the larger Petri dishes. During the experimental work necessary to perfect the process I was more successful with the other method. As neither is satisfactory under all conditions, some worker should be able to devise a means that is better than either. We have seriously considered submerging the dish either in gelatin or in water, but the methods detailed have been adequate. In the beginning there will be some difficulty in excluding air, but with a little experience one is able to secure satisfactory results. I do not know that a little air does any harm, although our experience has been that an air bubble invariably goes directly to the place where one does not desire it. Dr. Funke suggests that specimens having irregular and corrugated surfaces that afford numerous depressions in which air bubbles may lodge should be coated with gelatin before any attempt is made to mount them. Intestine frequently requires such treatment. He advises me also that lungs and other specimens containing spaces occupied by air be placed in a vacuum or chamber in which the air is rarefied in order that the gas in the interstices may more rapidly be displaced by the gelatin. We have not tried this method, but suggest it as a possible solution of the difficulty frequently encountered in the preparation of lungs. The gelatin infiltration would be facilitated by immersing such specimens over night or longer in the medium kept liquid in the incubator.

Often a thin specimen would require so much of the medium to fill the dish that the resulting weight would make a cumbersome and unwieldy mount. This difficulty may be overcome by attaching the specimen to the dish by means of gelatin, and leaving the remaining space empty. This is best accomplished by flooding the surface of the glass plate with formalin-glycerin-gelatin; the specimen, for example a piece of intestine, is removed from the preserving liquid, lightly blotted with a towel and pressed into the gelatin, which quickly sets. The surface of the specimen to be viewed is left uncovered. As soon as the gelatin has set firmly, a slightly-warmed Petri dish is inverted over the specimen and pressed into the gelatin; the excess of gelatin outside the dish is removed with a knife or spatula; a narrow rim of gelatin painted around the junction between the Petri dish and the plate, and the seal completed by xylol balsam or other cement, as already directed. Sometimes such mounts loosen from the glass, but this difficulty has given us no trouble except in thick, weighty specimens, such as slabs of liver and bulky pieces of lungs. It could have been avoided by making thinner slices. We strongly advise this method for exhibiting the granular surface of a specimen where the unevenness would be obliterated by submersion in gelatin. It is recommended for exhibiting the granular surface of an incised lung in the red stage of croupous pneumonia, and for hemorrhagic infarcts. So far as we can see, the color preservation is fully as good as in submerged preparations. The method should be especially useful for

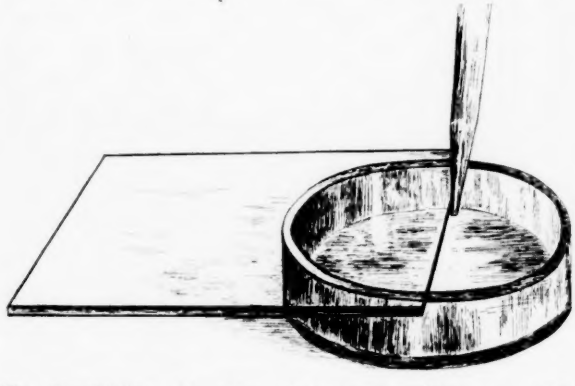

Fig. 2.—Sliding the glass plate into position. A. Medicine dropper by means of which a roll of fluid gelatin is kept in front of the advancing plate. This method is especially adapted to large mounts.

the mounting of large brain sections, or slabs, for teaching purposes. If the Petri dish be shallow, so as to throw the specimen near the surface, an excellent view can be obtained. Mounting on the surface of gelatin is adapted to the exhibition of animal parasites that have been preserved by any of the formalin methods commonly used.

The principle can be applied to gelatin plates containing colonies. If the plates are in Petri dishes it is only necessary to invert the dish on the glass plate, ring it with gelatin and complete the seal as already directed. If the old method of plating on glass, as originally advised by Koch, be used, the inverted Petri dish is warmed, a few drops of formalin placed on the gelatin,

Fig. 3.—Completed mount in formalin-glycerin gelatin. All parts of the mount are well shown except the ring of cement joining the Petri dish to the glass plate; unfortunately the photograph has not brought out the transparent ring of balsam. The actual size of the glass plate is 22.5 cm. by 27.5 cm. (9 by 11 inches). The specimen is a part of the brain surface showing slight exudate and areas of hemorrhage, case of purulent meningitis.

and the dish gently forced into position; the surrounding excess of gelatin is removed, and the sealing completed.

LABELLING.

The card used for labelling is the ordinary plain index card of medium thickness; on both sides the necessary legend is typewritten, using a "Record Ribbon"; the card is now trimmed so that at each edge it will be one-eighth inch narrower than the slide or other glass intended to cover it. The card is thrown into pure formalin and turned from side to side to prevent warping. While the card is soaking in the formalin (for which only a minute or so is necessary) a slide is cleaned by any of the approved methods. As a cover for the label we use a 2-inch by 3-inch slide, selecting, of course, the thinnest and most perfect with smooth edges. A 10 per cent. solution of gelatin, while still warm, is poured on the slide, the label is removed from the formalin, blotted between folds of filter paper, and quickly pressed down into the gelatin; a piece of filter paper is laid over it, and the label forced firmly against the slide, to which it adheres. As soon as the gelatin is set, which takes but a minute or so, the slide and its attached label are placed in the formalin solution to complete the fixation of the gelatin. The area on the glass plate selected for the label is now cleansed and some gelatin poured on the surface. The label and attached slide are removed from the formalin, blotted with filter paper and pressed down on the gelatin, the label, of course, going next to the glass plate. Weights are placed on the surface of the slide to force it into position, and the gelatin is allowed to pile up around the edges. After the gelatin is set firmly, a knife is run around the edge and the excess removed, as already described for the dish. A thin layer of gelatin is painted around the edges of the slide, and this, when dry, covered by xylol balsam in the same way as already directed for fastening Petri dishes in position. Where there is room for the label, it could be placed beside the specimen within the Petri dish; however, in that position it is more difficult to read and less readily seen when the mount is placed in a case. Dr. Radasch desired to label different parts of mounted embryos in such a manner that students handling the preparations could identify certain structures. I had wished for the same thing and looked in vain for indestructible letters that could be used. Dr. Thomas C. Stellwagen, Jr., kindly made for me some amalgam letters that we attached to specimens, but the process was laborious and time-consuming. Dr. Radasch found a typewritten letter could be used; the paper containing the letter is trimmed to the desired size, immersed in formalin, removed, rapidly blotted, grasped in forceps and inserted in place while the imbedding gelatin is still fluid. He has many exquisite preparations lettered in this way, the labels constituting legends similar to those in our textbooks.

When completed, such specimens make artistic permanent mounts. (Fig. 3.) The gelatin lacks the macerating effect of fluids, and, so far as we can observe, preparations two years old are as fresh to-day as when first mounted. The mounts can be handled with wet hands; they may be washed with soap and water, and, as all parts are under glass, they are indestructible except by breaking. The fact that they are glass and appear much more fragile than they really are lead students to manifest care in handling them. Many of the preparations have been handled by hundreds of students and none has been broken. That they are not exceedingly fragile is indicated by our experience at Atlantic City. Nealy one hundred of these mounts were sent to the Session, and when the boxes were opened not one was found broken; two were dropped from the table, and one of these cracked, but was not withdrawn from the exhibit; few visitors noticed the break. In returning from Atlantic City three were broken, but the packing was not well done.

SPECIAL RECTANGULAR JAR.

While the gelatin method is especially adapted to mounts of membranes, tissues in thin slabs and relatively light preparations, there still remain a number of specimens that conveniently can not be prepared in this way. Over a year ago[1] I described a jar and adapted a clamp that, with some improvements, we are using today. This device (Fig. 4) consists of (1) a glass container, (2) a special metal clamp contrivance for securing a water-tight seal, and (3) includes two special labelling devices. The jar is 20 cm. high, 10 cm. wide and 4 cm. thick. When properly constructed the wall is practically the same thickness (0.4 cm.) at all points. Imported jars are recommended, as attempts to secure a jar of uniform thickness in this country have been unsuccessful. American manufacturers seem unable to make a jar that is not thinner at the corners, and therefore unadapted to our purposes. The clamp consists of two plates and two vertical rods which pass through the top and bottom plates, drawing these firmly to the jar by means of threads and nuts on the upper ends of the rods. The rods are split above the top plate for the reception of a label, which consists of an ordinary index card, on both sides of which the legend is written. The bottom of the jar is solid and rests on a rubber cushion; the top is closed by a similar rubber cushion that fits accurately into a recess that, in the figure, conceals it. These cushions are made of extra heavy, steam packing rubber that in cylinder heads of engines lasts for months. With the imported jar having thick sides the seal is perfect and in our mounts has remained so for over one year. If the jar be opened or the fluid changed often it may be necessary to renew these rubbers, which are comparatively inexpensive. Thin membranes, intestines and other specimens possessing too little rigidity to retain a permanent shape and position are attached to a frame made of glass rod.

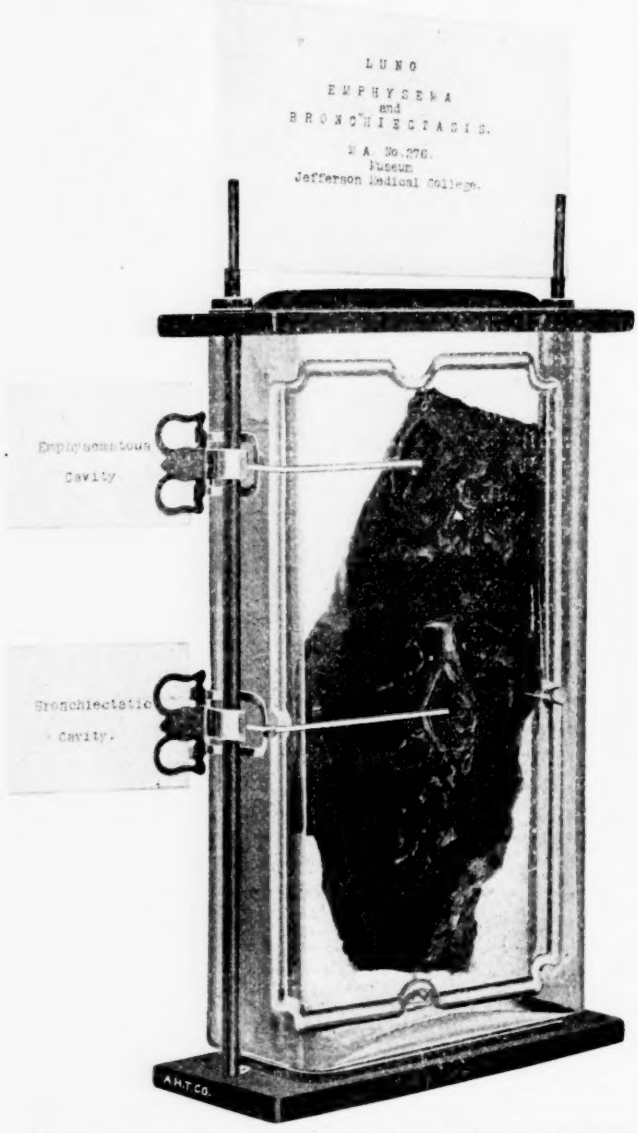

Fig. 4.—Improved rectangular jar, clamp and labelling device described in the text. The specimen photographed is a thin slab of lung showing emphysema and bronchiectasis. Contrary to the rule in such cases it is decidedly red, the high color being due to co-existing congestive condition resulting from associated cardiac lesions. This relatively bright red color has prevented accurate reproduction of the specimen. The labelling devices are well shown. In retouching the photograph the glass frame, by which the specimen is suspended, has been made unduly conspicuous, as there was no way by which we could determine how much detail would be lost in the reproduction; as a matter of fact, the frame is scarcely discernible when in position and covered by fluid. Reproduction five-twelfths natural size.

A device that seems to me would be extremely advantageous in teaching is a labelled pointer than can be adjusted vertically on the rods at the side of the jar, and is used to indicate any particular point on the specimen to which it is desired to draw special attention. These pointers can be placed at any height, are easily shifted from place to place, readily transferable from jar to jar, and any number desired may be used on one specimen.

When properly sealed the jar may rest in any position, and of all devices for the preservation of specimens in a liquid medium it is most economical in space and fluid. It requires but 5 cm. (2 inches) shelf width and 13 cm. (5¼ inches) base, so that seven jars without lateral cards can be placed on a shelf 6 cm. (2½ inches) wide and 88 cm. (36½ inches) in length. The amount of lateral space occupied by labels supported on pointers depends, of course, on the size of the cards used for such labels. Even under unusual conditions such cards should not be over 5 cm. (2 inches) in length, and as but 4 cm. of this projects beyond the base of the jar, 17 cm. (6¾ inches) will afford ample lateral space on the shelf, the depth of which remains the same as when side labels are not used. I have considered cases for these jars, and also for the gelatin mounted preparations, built on the principle used in the construction of sectional bookcases, and, should directors of museums find such jars acceptable, stacks could be arranged similar to those used in libraries where ready access to volumes is desirable.[2]

1. Proceedings of the Pathological Society of Philadelphia, June, 1903.

2. I am indebted to the Arthur H. Thomas Company of Philadelphia for the preparation of the illustrations that accompany this article.

Education of a Doctor.—The layman who reads the proceedings of a medical congress in these days will be impressed with the fact that the practice of medicine has become a very serious business, and the preparation for it an arduous undertaking. The old-fashioned doctor, who got what training he had from a voluntary attendance on two terms of didactic lectures, aided by the reading of a few text-books and a possible association with an older practitioner, started out on his professional career with everything to learn, and his success or failure depended mainly on the personal qualities which he brought to his work. Personal character and fitness are no less essential now than before, but it is simply impossible at the present time for a man to start out on the practice of medicine with the slender equipment allowable a generation ago. It is not merely that the colleges require more preparation for a degree, they require more because the practice of medicine has developed into a science to be acquired laboriously.—*Philadelphia Ledger.*

WHAT CREDIT, IF ANY, SHALL BE GIVEN THE HOLDERS OF BACCALAUREATE DEGREES FOR ADMISSION TO ADVANCED STANDING IN MEDICAL SCHOOLS? *

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PRINCIPAL CAUSES FOR THE DISCUSSION.

When beginning preparation on this paper I was surprised to find how closely the closing paragraph of my remarks before this Association last year applied to the theme of this year's discussion. The substance of this paragraph may properly begin the discussion of my topic:

The allowance to be made graduates of colleges of liberal arts and science must receive careful attention. The independent colleges and medical schools suffer by the drifting of their students to the universities that can afford both lines of work and a combined course, saving one or two years of time. The presidents of independent colleges plead for subjects that they regard as essential to liberal culture—for example, psychology—while the deans of the independent medical schools plead for their share of the stronger students with the college training. All seem agreed, however, that the matriculate possessing the baccalaureate degree, other things being equal, is better fitted for entrance on medical study than the graduate of the high school.

NEW YORK ESSENTIAL STATUTORY REQUIREMENTS.

The New York medical statute requires for admission to the licensing examination three essentials:

Educational.—1. Evidence of a general education preliminary to receiving the degree of bachelor or doctor of medicine in this state; the medical student certificate.

2. Evidence of the study of medicine for not less than four full school years of at least nine months each, including four satisfactory courses of at least six months each, in four different calendar years, in a medical school registered as maintaining at the time a satisfactory standard.

3. The degree of bachelor or doctor of medicine from some registered medical school.

The Principles of Registration.—The statute also requires that New York medical schools and New York medical students shall not be discriminated against by the registration of any medical school out of the state whose minimum graduation standard is less than that fixed by statute for New York medical schools.

All matriculates prior to Jan. 1, 1898, who graduated prior to Jan. 1, 1902, had to present evidence of three years' study of medicine in a registered medical school; subsequent to those dates, four years. And the earning of the medical student certificate two years prior to the date of graduation on a three years' course, when the majority of the strong schools were affording four-year medical courses, permitted the registration of most of the stronger medical schools of the United States.

For registration subsequent to Jan. 1, 1898, it soon became evident that but few medical schools of the United States could meet the New York statute if both preliminary and professional requirements were to be exacted of the school applying for registration. Under a ruling of the Attorney General, the registration by the regents of the general preliminary requirement, independent of the professional, seemed permissive. This permitted the registration of many of the stronger medical schools of the United States that formally agreed to meet the professional statutory requirements.

A widespread endeavor, however, to recognize the baccalaureate degree, as well as the degrees from schools of dentistry, veterinary medicine, pharmacy, osteopathy and the like, precluded the registration of a number of the stronger schools.

The Amendment of 1902.—After a careful discussion of the question by representatives of both the medical schools and of the medical profession of the state, an amendment to the medical act was passed in 1902, providing that:

"The regents may in their discretion accept, as the equivalent of the first medical year, evidence of graduation from a registered college course, provided that such college course included not less than the minimum requirements prescribed by the regents for such admission to advanced standing."

Meanwhile, as the amendment was passing through the legislature, it became apparent that the profession did not favor the extension of time to graduates of schools of dentistry, veterinary medicine, pharmacy, osteopathy, and the like.

THE DISCUSSION AT CONVOCATION, 1902.

A careful discussion of this question in all its bearings occurred at convocation, 1902.[1]

This discussion was participated in by representatives of both the medical and the liberal arts faculties of representative New York institutions. In continuation of the study, a suggested outline was prepared and sent to many leading educators.

Results of Discussion.—For convenience, the theme was called the "Combined Baccalaureate and Medical Course," and it seemed uniformly agreed:

1. That the baccalaureate degree should meet the university ordinances now in force, i. e., be granted on four full years of collegiate work, subsequent to at least three years' high school preparation or the equivalent.

2. That the combined baccalaureate and medical course should consist of seven full years of baccalaureate and medical work.

3. That subjects the full equivalent of the present first medical year should be found in the college and high school course.

Discussion by Correspondence.—The first question on conclusion 3 was: Is there a practical unit of measure for the first medical year, or can one be determined? And the second: Can the medical schools readjust their curricula so as to admit to the second medical year graduates of registered colleges that present the full requirements of the first medical year, tested by that unit?

In order to determine whether the medical schools and colleges of New York state could agree on such a unit of measure, an outlined first medical year's requirements in anatomy, biologic sciences, chemistry, physics and physiology was carefully prepared by representatives of the medical profession and schools and sent to representatives of the independent medical schools, to the universities maintaining both departments, and to independent colleges.

From the replies received, I quote the following representative of each:

PRESIDENT STRYKER of Hamilton College, representing the independent colleges, writes: "As to our courses in the subjects named, you will nowhere find more thor-

* Read at the annual meeting of the Association of American Medical Colleges, Atlantic City, N. J., June 6, 1904.

1. See Regent's Bulletin, No. 58.

ough college courses in the physical sciences. And our teachers are strongly-equipped men, doing stiff work. . . . A student can have 353 hours in biology, exclusive of sophomore year; 235 hours in chemistry, and 198 hours in physics. We can give a man all that is called for. . . . Surely, we meet all you ask."

PRESIDENT WILSON, Princeton, writes: "We do not here in Princeton believe in the principle of combining the baccalaureate and medical courses. We have not, therefore, studied out the proper details for such a combination."

DR. RAYMOND of the Long Island College Hospital, representing the independent medical school, through members of his faculty, writes: "I can see no reason why the courses in physiology, as now given in the L. I. C. H. can not be rearranged so as to harmonize with the plans suggested. I approve of the course in anatomy as outlined. I heartily approve of the plan outlined as a proper course in chemistry and physics."

DR. ALBERT VANDER VEER of the Albany Medical College writes in answer to the question: "Is the work too severe for the majority of the medical schools?" "No." "Is the time devoted to instruction in laboratory work properly proportioned?" "It is all right." "Can your medical school adjust its curriculum?" "It is going to be very difficult for us to arrange the subjects of anatomy and physiology, but these are conditions that will arrange themselves in due time. There must be a concession on the part of colleges as well as medical schools, and this question will have to be studied with a great deal of care. I admire the caution, but firmness, with which you are handling it."

PRESIDENT J. G. SCHURMAN of Cornell University, representing an institution that maintains both faculties, writes: "It seems to me that there is more need of the extension of the course from four years to five than of the substitution of the work proposed."

DEAN POLK of the medical faculty writes: "You see that I would make the reason for shortening the course, not the possession of an A.B. degree, which might mean anything, or, so far as medical study is concerned, nothing, but the previous mastery of the sciences embraced in the medical curriculum of the state of New York."

DEAN DIDAMA of Syracuse University writes: "The full equivalent of the present first medical year can not be found in the college and high school course. This university provides a joint baccalaureate and medical course of seven years. If either course is to be shortened for the benefit of the other, it should be the baccalaureate and not the medical."

DEAN RICHARDSON of Harvard University says: "Students who can finish, or practically finish, the requirements for a degree in three years, which usually takes four, but prefer waiting until a later period for graduation . . . may be admitted to this school with the understanding that their degrees will be received the following year."

DEAN SMITH of Yale says: "The year's work is not too severe for any medical school to which college graduates would be likely to go. The proportion of laboratory work is less than we devote to analogous subjects. It does not seem practicable to change our curriculum."

DEAN CHARLES H. FRAZIER of the University of Pennsylvania writes: "First-class medical schools, willing to admit students to their second year, should not regard the specified requirements as too severe. The required hours of laboratory work are inadequate. Three years ago this school recast its curriculum, adopting the 'semiconcentration' system."

DEAN VAUGHAN of the University of Michigan says: "The year's work is not too severe for medical schools. I do not think that the proportion between hours devoted to instruction and laboratory work is good. I do not think it would be possible for a student having taken the course as outlined in some literary school to finish his medical work with us in three years."

DEAN DODSON of Rush Medical College writes: "From the point of view of this institution, it seems to me that your board has undertaken a difficult, if not impossible, task."

DEAN RITCHIE of University of Minnesota writes: "The work is not too severe for our school. As laid down, it is not equivalent to the work done in our laboratories. If we were inclined to admit the A.B.'s to our second year, our state board of examiners would not permit it."

DR. CHARLES MCINTYRE of American Academy of Medicine says: "I see no reason why it should be too severe for the majority of medical schools. If the hours of lectures are supposed to be text-book work, with recitations, the ratio between the lecture and the laboratory work is a fair one. It will require some readjustment of the medical curriculum."

These replies are samples that can be increased both in number and length.

PROPOSITIONS.

1. If credit is to be given to institutions without the state of New York, more accurate registration, both of the college course and the medical course, is essential. To illustrate this proposition from the state board standpoint, let me quote from a recent letter and its reply:

LETTER.—Will you have the kindness to advise me by return mail as to your knowledge of the University of Sciences Francis Joseph at Kalozvar, Hungary, concerning the degree of Universal Medical Science?

REPLY.—It gives me pleasure to inform you that the Royal Hungarian University Francis Joseph is located at Klausenburg, Hungary, has a medical faculty of 12 full professors, an attendance of 106 medical students in 1901-02. The program of actual studies for the doctorate calls for ten semesters. On completing the studies, candidates enter on three examinations for the doctorate, in the presence of a commisison composed of specialized professors, under the presidency of the dean of the faculty. A candidate satisfactorily passing this examination receives the degree of Doctor Medicinæ Universæ. Admission to the practice of medicine in Hungary is obtained at the end of the examinations for the doctorate, as in France, and differs from Germany, where the state examination, independent of the university examination, is obligatory.

Let another testify concerning college degrees. U. S. Consul James H. Worman, Munich, Bavaria, writes regarding American academic honors:

On the assumption of consular duties in Munich, in 1899, I found that American academic honors were a subject of general discussion in Germany. So many German possessors of the American doctor title were illiterate persons that university men from our best institutions were looked at askance. A careful inquiry into the whole matter soon disclosed a lamentable state of affairs in some states at home. . . . In the criminal history of the United States these cases will some day figure as evidences of official corruption of the most daring character. . . . Has not the time come for an earnest and united effort of the American colleges, the educational associations, state and national, and all other bodies interested in the good repute of American scholastic and professional institutions, to harmonious action in the states of our Union for such legislation that will bring the degree-conferring power under strict state supervision? . . . A council of educators should

be entrusted with powers similar to those vested in the regents of the University of the state of New York, this council to be composed of the most eminent men in the state without any reference to political considerations. Further, that no degree-conferring institution should be incorporated without the approval of this council of education. In the self-same spirit the legal section of the American Bar Association resolved, in 1897, that the degree-conferring power should be subject to a strict state supervision to be exercised in a manner somewhat similar to that which is exercised by the regents of the University of the State of New York.

The provision under the laws of New York to which these various propositions refer absolutely prevents any abuse by the academic or professional institutions of the state of their power to confer degrees.

2. Accurate registration is dependent both on examinations and inspection.

Pio A. Da—— submitted a certificate from the University of Montevideo, Uruguay, to the University of ———, United States, and was admitted to the class of 1904. The certificate showed entrance examinations for admission to secondary studies and secondary subjects as follows:

Algebra	3
First and second year French	6
Physics, parts one and two	4
Chemistry, part one	2
First and second year philosophy	3
Total, a year and a half in high school work	18

Consul Worman says, regarding the kind of legislation state boards should effect:

The authority vested in the inspector of education has in many states not been exercised on behalf of the professional schools and colleges. Its exercise should be exacted of him by the profession in each state where such an official exists for the supervision of educational and professional institutions. Where legislation is necessary to make the authority sufficiently abundant to suppress illegal acts by incorporated institutions, it should be urged by the profession without delay and with persistency. Europeans, and especially the Germans, look on our whole educational fabric with distrust because of the swindling institutions that have been possible in certain states. The courts, weary of distinguishing between the true and the false, have ruled out all of them as private enterprises.

To illustrate another phase of the necessity of accurate registration, dependent both on examination and inspection, I quote from another recent letter from a state of Australia:

The information furnished by you will be most useful to this board, and I am directed to convey the thanks of the members for your courtesy in the matter.

In future no application for registration from Americans who do not possess the certificate granted by your university will be entertained by this board. . . . Any British qualification is registerable in this state, but the board reserve to themselves the right of refusing to register any foreign qualification.

The rules regarding registration in the other states are practically the same, with the exception that no American qualifications are registerable in Queensland, and no foreign qualifications whatever in Western Australia. . . .

I shall be glad if you will furnish me annually with a list of registered and accredited colleges of America for the guidance of this board.

3. Reciprocity between states must be based on actual requirements met by licensees, and a uniform minimum statutory requirement for all states of the Union is at present impracticable.

To illustrate: A practicing physician of the state of New York, having met requirements plainly above those of a neighboring state, was compelled by declining health to remove to that neighboring state to save her life. She was dependent on her practice for her livelihood and could enter on a profitable practice if she could secure the requisite license. The reciprocity clause of the statute in force in the state to which she would remove provided for reciprocity between states that conferred the same privileges on its licensees. There was no question regarding her professional attainment. She was denied the right to practice in the new state because the state from which she planned to move could not reciprocate the favor conferred on her by registration in the state to which she would have moved for the purpose of saving her life.

4. State control should concern itself with the minimum statutory requirement for admission to practice, i. e., the licentiate credential, and leave to the schools the determination of the maximum scholastic, i. e., the degree.

THE VALUE OF THE CONVERSATIONAL METHOD OF MEDICAL INSTRUCTION.

THE "STUDENTS' CONFERENCE."

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The methods of medical pedagogy have undergone many changes during the last twenty-five years, the most important being that the antiquated didactic method of teaching has in a large measure given place to practical, clinical and laboratory teaching. Some excellent authorities now advocate the complete abandonment of the didactic method, recommending that in its place certain text-book readings shall be assigned to the student, and that demonstrations and conferences between the teachers and pupils covering this subject-matter shall constitute the essential part of the instruction. It has always seemed to me illogical to entirely do away with the didactic method, which I believe occupies an important and indispensable place in medical pedagogy; first, because there are many subjects that can be far better treated didactically than practically; second, because new and controversial matters can be far better summarized and treated by the professor whose business it is to familiarize himself with the advances of the subject than acquired by the student from text-books, and, third, because an enthusiastic and alert teacher can arouse the interest of his pupils by presenting his subject to them in a systematic, attractive and logical manner.

I do not wish to be misconstrued to favor reversion to the didactic method exclusively. I simply favor what I conceive to be an essential amount of didactic teaching, to be supplemented by work in the laboratory and by conferences

Nearly all of our ideas are based on opinion rather than on experience, and it was with much interest that I availed myself of an unusual opportunity to demonstrate, practically and statistically, the value of the conference method of teaching.

In the Medico-Chirurgical College of Philadelphia during the years 1903 and 1904, the sophomore class of the medical department was divided into two sections for practical work in the laboratories. The section schedule was arranged in such a manner that during the first

half of the college year one section remained unoccupied for one hour each week, and in the second half of the college year the other section was unoccupied during the same hour. In order that his time should not be lost, I decided to utilize it for conferences.

The sophomore students who were to receive this advantage attend two didactic lectures on general pathology each week throughout the college year, perform about 150 hours' practical work in the pathologic laboratory, and about 80 hours' practical work in the bacteriologic laboratory. Two examinations were held during the year—one immediately after the Christmas vacation, and one at the end of the course in the month of May.

The division of the class into two sections was made according to their matriculation, and the men of the two sections should have averaged about the same in their intellectual abilities.

Section A was benefited by the conferences from the opening of the session to the mid-year examination. Other than this there was perfect uniformity in the instruction received by both sections. Forty-five men took the examination, which was written, and was a severe test, carefully conducted. The average mark attained was 82; the highest mark 98, the lowest mark 37. Taken by tens, the marks ran as follows:

100 to 90	16 men
90 to 80	12 men
80 to 70	7 men
70 to 60	6 men
60 to 50	3 men
50 to 40	0 men
40 to 30	1 man

In the same examination the men of section B, of whom there were forty-nine taking the examination, and who had had no conferences, made an average mark of 70. The highest mark attained was 100, the lowest 35. Taking this section by tens, we find a striking difference, which ran as follows:

Between 100 and 90 there were	9 men.
Between 90 and 80 there were	6 men.
Between 80 and 70 there were	9 men.
Between 70 and 60 there were	12 men.
Between 60 and 50 there were	11 men.
Between 50 and 40 there were	0 men.
Between 40 and 30 there were	2 men.

We thus find that the difference between the average mark attained by the men of section A, who had conferences, and that of the men of section B, who had none, was 12 points in favor of section A. This seemed to show how great an advantage the men gained through conferences; but the question, of course, arose whether this was not an accidental difference depending on variation in the intellectuality of the two sections. We notice, however, that the highest mark made in this examination—viz., 100—was made by a man in section B who had had no conferences; also that the lowest mark —35—was also made by a man in section B. It is very striking that in section A, 16 men should receive marks above 90, but that in section B only 9 men should receive marks above 90; that in section A only 4 men should receive marks less than 60, but that in section B there should be 13.

In order to make an accurate comparison between these sections, determine their comparative intelligence and ascertain whether the conference was the cause of the extraordinary variation in the marks, the questions in the final written examination of the year were arranged to cover only subject-matter that had been taught in the second half of the year. By this means it will be observed that the results obtained by section A in its examination, covering a period during which its men had had conferences, could be accurately compared with those of section B, covering the period and subject-matter on which its men had had the conferences.

When we come to study the effects of the conferences on section B, as shown in this final examination, we find two possible sources of error, the first being that the final examination was a little more severe than the mid-year examination, and the second, that the men are apt to prepare more carefully for the final than the mid-year examination.

Forty-seven men in section B took the examination, the average mark being 75, the highest mark 97 and the lowest 21.

Between 90 and 100 there were	11 men.
Between 80 and 90 there were	11 men.
Between 70 and 80 there were	6 men.
Between 60 and 70 there were	13 men.
Between 50 and 60 there were	2 men.
Between 40 and 50 there were	3 men.
Between 30 and 40 there were	1 man.

It will be noticed that the best man in this section, who had received 100 at the trial examination, made only 97 at the final, and that the poorest man received 21 instead of 35. This seems to indicate that the final examination was more severe than the mid-year examination, which will be borne out by subsequent demonstration. The number of men receiving between 80 and 100 has increased to 22 over 15 in the mid-year examination; the number receiving less than 60 is 20, against 17 in the mid-year examination, but the general average of the whole section has been raised 5 points. This, taken by itself, is extremely suggestive, though not convincing; but when we turn to the results of section A in the final examination we are left no room to doubt the immense value of the conference method of teaching. Of the forty-four men of section A taking the final examination, the average mark was 66, instead of 82, as in the mid-year examination. The highest mark was 96, instead of 98; the lowest mark was 21, instead of 37.

COMPARISON OF MARKS.

	Final Examination	Mid-year Examination
Between 100 and 90	5	16
Between 90 and 80	7	12
Between 80 and 70	8	7
Between 70 and 60	10	6
Between 60 and 50	7	3
Between 50 and 40	3	0
Between 40 and 30	2	1
Between 30 and 20	2	0

In the mid-year examination there were only 4 men with marks below 60, but in the final examination there were 14. The average intelligence of section A seems to have been a trifle greater than section B, for the average of all of the marks for section A in both examinations is 74, and the average of all the marks of section B in both examinations 72.5. The conferences during the last half of the year increased the average mark of the men in section B from 70 in the mid-year examination to 75 in the final examination, while section A, whose men attained a general average of 82 in the mid-year examination, lost an average of 16 points each, attaining a general average of only 66 in the final examination. The final examination was more severe than the mid-year examination, as is shown by the fact that in the former the ninety-one men taking the examination made an average mark of 71, whereas the ninety-four men taking the latter examination made an average mark of 76.

The total variation in the two sections, therefore, is determined by adding the loss of section A to the gain of section B, which equals an average of 21 points per man in favor of the men who had the conferences.

It seems to me that no better demonstration of the

value of a conference can be given than is shown by these statistics.

Lest some one should misunderstand exactly what is meant by the term "conference" as here employed, it may be well to add a few words in explanation. The class of students and the professor met in a small lecture room, and all sat down. There is a certain pleasant informality about a seated professor that is wholesome on such occasions.

A leading question was asked a student whose name was chosen from the list of the class, and by auxiliary questions the thoroughness of his understanding of the subject was brought out. If it were shown by the answers that his knowledge was defective, another student was asked to point out the error. In this manner, by asking a few students many questions, and by permitting the students themselves to ask any number of questions, by immediately passing over matter that was understood and carefully explaining what was not understood, by endeavoring to determine why erroneous ideas were conceived, and by sound reasoning to bring the student's mind back to the correct channel of thought, the class progressed from day to day to a more and more thorough intelligence of the philosophy of the subject, so that they were easily able to cope with ordinary problems.

THE ELECTIVE SYSTEM IN MEDICAL SCHOOLS.

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With the growth of the curriculum in our medical schools, the urgent necessity has arisen of either lengthening the number of years of medical study from four to five, or of so adapting ourselves to the needs of the medical student that some way must be found out of the difficulty.

This increase in the number of subjects of study has arisen in two ways: 1. The development of the various laboratory subjects (and by this I include anatomy, physiology, histology, chemistry and pathology) has necessitated the devotion of practically the entire first two, to so-called theoretical branches, leaving the practical branch to the last two years. 2. The rapid development of the special branches of both medicine and surgery (gynecology is included in the latter), has taxed the number of hours in the school year to the utmost. An effort has been made in some schools to correct this latter growth, that is, practical branches, by dropping didactic lectures entirely and devoting the third and fourth years almost exclusively to demonstrations and clinical work at the bedside or in the dispensary, or hospital amphitheater. Even with the latter change, the medical schools in our larger cities have found it impossible to give every student the necessary personal contact with both teacher and patient, which is the prerequisite of thorough medical education. When we consider that the classes in our larger medical schools average from 150 to 200 in the junior and senior years, respectively, it will be readily seen that the old-fashioned amphitheater clinics can no longer be profitable to either teacher or student. I have stated above that we must find some way out of the difficulty, and I am firmly convinced that the proper application of the elective system of our medical curriculum will solve this problem better than any other method. In an article written by me two years ago I strongly advocated this system from a merely theoretical standpoint. Since the publication of my article the elective system has been adopted by the college with which I am connected, and after one year's trial both faculty and students agree that it has been a great success. The reason for this success has been that we have not applied the elective system without restriction. It was thought by our faculty that the limited application of election on the part of the students would be of far greater value than if they were permitted to select both teachers and subjects without some guidance. In the first place, we have applied the elective system to the third and fourth years only. During the first and second years the student, as in other schools, takes up his anatomy, physiology, chemistry, materia medica, histology, biology, embryology, therapeutics, surgical pathology, hygiene and bacteriology, in a more or less routine manner, so as to get a thorough foundation for the more practical work of the following two years. In addition to these laboratory subjects, elementary clinics, as they were called, were held by the professors of the third and fourth years twice a week. When the students enter the third and fourth years they find the following schedule:

JUNIOR YEAR.

SPECIFIED REQUIRED SUBJECTS.

	Hours.
1. Neurology	72
2. Physical diagnosis	54
3. Dermatology	36
4. Principles and practice of surgery	144
5. Orthopedic surgery	36
6. Operative surgery	36
7. Laryngology, rhinology and otology	36
8. Genito-urinary diseases	36
9. Clinical Anatomy	36
10. Microscopic and chemical diagnosis	66
11. Medical jurisprudence	36
12. Autopsies	36
13. Dispensary clinics	54
	678

ELECTIVE SUBJECTS.

1. Medicine (didactic work), lectures and recitations in four courses of 54 hours each: Course A. Infectious diseases and intoxications. Course B. Constitutional diseases and diseases of the kidneys. Course C. Diseases of the digestive organs. Course D. Diseases of the heart and lungs. Total	216
2. Obstetrics	72
3. Gynecology	36
4. Medical amphitheater clinics	216
5. Neurologic amphitheater clinics	72
6. Surgical amphitheater clinics	180
7. Dermatologic amphitheater clinics	72
8. Laryngologic amphitheater clinics	72
9. Gynecologic amphitheater clinics	144
	1,080
Total number of hours	1,758

SENIOR YEAR.

SPECIFIED REQUIRED SUBJECTS.

	Hours.
1. Medicine	216
2. Psychiatry	36
3. Chest diseases	36
4. Pediatrics	54
5. Ophthalmology	18
6. Obstetrics	72
7. Gynecology	36
8. Autopsies	36
9. Dispensary clinics	54
	558

ELECTIVE SUBJECTS.

1. Neurology	72
2. Surgery	72
3. Medical amphitheater clinics	252
4. Neurologic amphitheater clinics	72
5. Pediatric amphitheater clinics	72
6. Surgical amphitheater clinics	468
7. Ophthalmologic amphitheater clinics	108
8. Gynecologic amphitheater clinics	108
	1,224
Total number of hours	1,782

In the junior year a total of 1,758 hours of instruction are offered, and in the senior year a total of 1,782

hours. Of this, 1,000 hours of instruction constitutes the year's work. Each student is required to take all of the specified subjects in his year; in the junior year these subjects amount to 678 hours; the remaining 328 hours he can make up from the elective subjects, exercising, to a large extent, his own choice in the selection of subjects which he will take. In the senior year the specified required subjects amount to about 558 hours; the remaining 442 hours may be selected from the elective subjects and clinics. Even in this selection the student receives some guidance, so that he must include among his elective subjects at least 120 hours of medical clinics and 120 hours of surgical clinics. Clinics in diseases of the chest, nervous system, pediatrics and dermatology are classified as medical. At the time of registration the student is required to designate subjects which he elects in order to complete his 1,000 hours, and will not be enrolled in the classes until his course has been approved by the secretary of the college. The secretary has authority to refuse to approve of the course elected by any student when for any reason it seems to him not well selected.

By a reference to the above table, it will be noted that surgery is compulsory in the junior year, but is elective in the senior year, and vice versa, medicine, gynecology and obstetrics are elective in the junior year, but are compulsory in the senior year.

What are the benefits of this privilege of election on the part of the student? He can so adapt his time in both years that he will not be obliged to sit on the benches in the lecture room or in the clinical amphitheater from morning till night. By a careful selection of clinical work he will have ample time to study, and yet be able to have a full curriculum and not slight any subject.

In addition to this, it gives the student more time to do special research work if he is prepared for this during his undergraduate period. This power of election on the part of the students, especially in the direction of clinical work, has had its reciprocal beneficial influence in all of the schools in which it has been applied on the faculty. The moment a clinician is aware of the fact that the size of his audience is more or less directly dependent on his ability as a teacher, he will make a greater effort to increase the same by a more careful study of his cases, so that he will not be accused of being careless in his work. He will acquire greater thoroughness in his surgical procedures. Nothing acts as a greater stimulus to teachers than this elective system, and, once introduced, I am certain it will continue to find favor in every large medical school.

In this manner a large number of students can find ample clinical and didactic work. The college can also utilize to the best advantage all of its clinical facilities within its own walls or in hospitals contiguous to it. At the same time, through this power of selecting where he wishes to take some of his clinical work, the abundant material which exists in hospitals and dispensaries at some distance from the main seat of learning, can be used to the mutual advantage of the student and of the attending staffs of these extramural institutions.

In my opinion, the elective system carefully applied is a stimulus to both teacher and student. It enables a college with large junior and senior classes to so distribute its students that no clinic is overcrowded, and there is a resultant individualization which is not possible in large classes.

THE TEACHING OF MATERIA MEDICA IN MEDICAL SCHOOLS.

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DESIRABILITY OF RESTRICTING THE COURSE OF MATERIA MEDICA.

"I must confess, if I had my way I should abolish materia medica[1] altogether. . . . Not one trace of a knowledge of drugs has remained in my memory from that time to this; and really, as a matter of common sense, I can not understand the arguments for obliging a medical man to know all about drugs, and where they come from. Why not make him belong to the Iron and Steel Institute, and learn something about cutlery, because he uses knives?" . . .

"I entertain a very strong conviction that any one who adds to medical education one iota or tittle beyond what is absolutely necessary is guilty of a very grave offense."—Huxley, "On Medical Education," 1870.

Everyone will agree with this last sentence. In most medical schools the required class attendance exceeds thirty hours per week, leaving the student a very insufficient time for home study. This condition tends naturally to become worse, for the domain of medical knowledge is constantly extending, and the teaching must follow these extensions. It is, therefore, imperative to lighten the curriculum as much as possible by curtailing such studies as are no longer essential.

A case in point is presented by the relation of pharmacology, materia medica and therapeutics. The study of the action of drugs by laboratory methods is a new branch and one which requires considerable time, which must be taken from some other subjects. It is very true that a knowedge of pharmacology facilitates the study of therapeutics so greatly that a part of the time formerly devoted to therapeutics can be assigned to pharmacology without injury. The saving, thus effected, is not, however, sufficient. What further time is needed can be profitably drawn from materia medica (including pharmacy), if the course in these branches is wisely reorganized. This can be readily done, especially if they are taught in the same department as pharmacology, as they should be, in my opinion.

No one can doubt that the action of drugs is of vastly greater importance to the medical practitioner than their natural history. The latter can only be of essential importance when the physician is located remote from a pharmacist, a condition which is rather rare in this country. Nothing prevents those who expect to be so situated from taking a special, optional course, and such should be offered by the college, if it is needed. Were there no other demand on the students' time, an exhaustive course of materia medica might be profitable to all other students, but there can be no question that the other demands are more important. Indeed, I incline to the belief that the above advice of Huxley has not been sufficiently heeded by many schools, doubtless because it is somewhat too radical.

WHAT PARTS OF MATERIA MEDICA SHOULD BE RETAINED?

How far, then, may the study of materia medica be safely curtailed? What is essential? What may be made optional and what omitted entirely? There is surely room for much honest difference of opinion in

1. It will, I hope, be understood that I do not include therapeutics under this head.

this connection. I venture to give my views, as they may serve as a basis for reflection.

I believe that the students should be given, by way of introduction, some general ideas about the classes of chemical and structural constituents of drugs. Sufficient botany should have been learned in school, and zoology is quite superfluous. The systems of weights and measures should be made thoroughly familiar. In regard to pharmacy, the student should learn the different classes of pharmaceutic preparations, their common characteristics and special uses, and he should be given (by demonstration) a broad conception of how they are prepared. A little practice in simple dispensing is very desirable. All these data will be invaluable aids in understanding the materia medica of special drugs.

As regards the latter, only those should be discussed at all which have a real, living therapeutic or toxicologic importance. Of the former the student should be required to know, in the first place, those data which are needed in prescribing: The correct Latin name (faulty orthography indicates a faulty education, in materia medica as elsewhere), the methods of administration, the most useful preparations, *and these only!*[2] Their dose, solubility, incompatibility, and in a few cases, their composition; constituents should be taught only in so far as important therapeutically or by incompatibility.

Furthermore, I believe that there should be required considerable familiarity with the appearance and other physical characters of the important drugs and their principal preparations, so that the more common poisons may be identified or excluded. This seems to me very important, and I believe that I lay rather more stress on it than is commonly done. The knowledge so obtained is also very valuable, in that it often enables the physician to adapt the medicine to the peculiarities of the patient, and sometimes, to prevent the results of an error on the part of a druggist. I require this acquaintance rather oftener in the case of preparations than of crude drugs. I need hardly add that a good deal of discrimination must be exercised in selecting the drugs to be studied. The study must, of course, be made directly from the specimen.

It will be seen that the principal abridgment which I advocate in the teaching of materia medica concerns the number of drugs and preparations to be studied, neglecting all those—and they are quite numerous—which are unimportant.[3] A further saving is obtained by limiting pharmacy, and by paying no attention to habitat, natural order, method of collection, etc. These are quite useless for practical purposes, and those students who are interested in them can easily find the information. The natural orders are sometimes useful in explaining relationships, but these can be touched on in pharmacology. In this way, and by arranging the course as indicated below, the class work in materia medica and pharmacy may be reduced to something like forty-five hours. Beside this required work, I believe that a more thorough study of the chemistry of drugs and of pharmacy is very useful, not so much by the direct knowledge which they give, but because the handling of drugs which they require gives a greater familiarity. This advantage is not sufficient, to my mind, to make them compulsory, but they may be offered as elective or optional work.

2. There is some excuse for the pharmacopeia retaining obsolete drugs and preparations, because these are sometimes used in certain localities or by the laity, but there is no reason for burdening medical students with them. It is to be wished that all state boards would discourage such questions as: "Give *all* the preparations of . . . . ."

3. This refers only to materia medica. It is often desirable to say a few words about the action of these unimportant drugs in the lectures on pharmacology.

ARRANGEMENT OF THE INSTRUCTION.

The dryness of materia medica is almost proverbial and it is, indeed, difficult to render interesting a study which consists so largely of memorizing. This difficulty is enhanced by constituting the subject into a separate course, as is so often done, and especially by letting this course precede that of pharmacology or therapeutics. What interest can there be for the student in memorizing certain tabulated information which he does not fully understand, about a drug which, too often, he has never seen, and about the uses of which he has no clear idea? What opportunities I have had of observing have only confirmed my objections to this plan. I believe that only the preliminary subjects of pharmacy, etc., should be taught separately and that the materia medica of the individual drugs should be studied immediately *after* their action and uses. It is my practice to give the student his first experience with drugs by letting him use them in the laboratory, as this is the most efficient way of arousing his interest and showing him the importance of the drug. When he has in this way obtained an objective knowledge of the effects of most drugs and has become curious to have them explained, their action is studied systematically in class, and after each lecture the students are supplied with the specimens of drugs, with instructions to describe them, again objectively, in their notebooks. Around this nucleus the other information is grouped. In this way the interesting parts of the study carry the more mechanical parts, so that these are less felt. It will be noticed that lectures are not emphasized in this schema. If there is any study in which formal lectures are misplaced this is certainly materia medica. The subject is taught with us almost purely by laboratory work and recitations.

DETAILS OF THE INSTRUCTION.

The course of instruction in my department begins with a talk on the gross and histologic structure of drugs, illustrated by the demonstration of specimens and some thirty microscopic slides (two hours). This is followed by chemic laboratory work on the important classes of plant constituents (two and a half hours). Then comes a demonstration on metrology (one hour), with a sufficient number of short drills. The general pharmaceutic methods (distillation, percolation, etc.), are demonstrated, as also the manufacture of the important classes of preparations, tinctures, fluid extracts, etc., (one and a half hours). The students are required to put up a series of prescriptions, including pills, emulsions, etc. (two hours). This subject is covered by about seven hours of recitation. Several topics are then taken up which do not interest us in this connection (incompatibility, prescription writing, toxicology). This brings us to special materia medica. The locally acting drugs are studied first, so as not to anticipate the laboratory course.

I have already mentioned that the materia medica is studied in connection with the pharmacology. After hearing the lecture on a pharmacologic group of drugs the students are required to enter the important data of materia medica in a special notebook. This may be done in a separate laboratory hour, or the lecture may be correspondingly shortened, according to the number of drugs to be studied. The compilation of a special notebook has a number of advantages. It encourages the study of the specimens, because correct descriptions must be given; it can be made more concise than any

text-book, and the mechanical act of writing, like drawing, is a powerful aid to memory.

It is suggested (but not required) that the notebook be of quarto size, and that the information be entered under the following columns: Latin name; English name; if of vegetable origin, the part of the plant used and chief constituents; appearance, odor, taste, mixable with water; with alcohol; dose; remarks (strength, etc., when asked for). The appearance, odor and taste should be described from the actual specimen. All the important specimens for each pharmacologic group are exposed at a convenient place in the lecture room or laboratory, and left there until their study is entirely completed. With large classes of students, it would probably be convenient to have duplicate sets of specimens. Each bottle should be labeled, not only with the name of the drug, but also with the information whether it can be tasted freely, with caution, or not at all (I employ printed green, blue and red labels for this). I also have the bottles labeled "important" or "identification." The latter are the specimens which the student must be able to identify at examination. They comprise only those important drugs which may be readily recognized. Those which would be difficult are merely marked "important." These the student must know so that when asked whether one of them *may* be such or such a drug (say potassium bromid), he can give an intelligent answer. Colored illustrations of the more important drugs, and herbarium specimens of the domestic medicinal plants, especially those of toxicologic interest, are also exhibited at the same time. Unimportant drugs are not exhibited at all, a notice being posted indicating where they may be found in the museum, should anyone be interested.

THE MUSEUM.

The specimens in the museum should be arranged on the shelves by the groups in which they are studied. All the important and identification specimens should be on one side of each shelf, or it might be useful to have a duplicate set of these in a special case. The curator may save himself considerable time by having the bottles numbered, so that each will have a definite place; a laboratory boy can then replace them readily after they have been used. The numbering may be done by the decimal system and a card index kept, for instance, Acid.Salicyl., 78.12, being found in case seven, shelf eight, twelfth bottle.

I have had the cases constructed along the wall of the corridor leading to the laboratory, where the students are obliged to pass them frequently—on the supposition that they will, consciously and unconsciously, glance over the drugs. The doors of the cases are kept unlocked.

It will be seen the plan of teaching materia medica which I have adopted relies mainly on the individual exertion of the student. The function of the instructor is limited to frequent short recitations, periodic inspection of the notebooks and occasional tests. The latter are especially valuable for insuring an interest in the study.

Resignation of Albert Fraenkel.—Professor Fraenkel has been privat docent of internal medicine at Berlin for thirty years, and has borne the empty title of professor for the last fifteen. He has now resigned these positions, weary of waiting, perhaps for the full rank of a professor. He is a nephew and was an assistant of Traube, and is one of the most prominent investigators in internal medicine, especially in lung affections. His lectures were very popular, especially among physicians taking postgraduate courses in Berlin.

CLAY MODELING IN THE STUDY OF ANATOMY.*

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"It would be difficult to overrate the value of anatomic knowledge to every class of medical men, physicians as well as surgeons; and every one knows that this knowledge can never be acquired to any desirable degree of accuracy except by those who labor for it with the scalpel

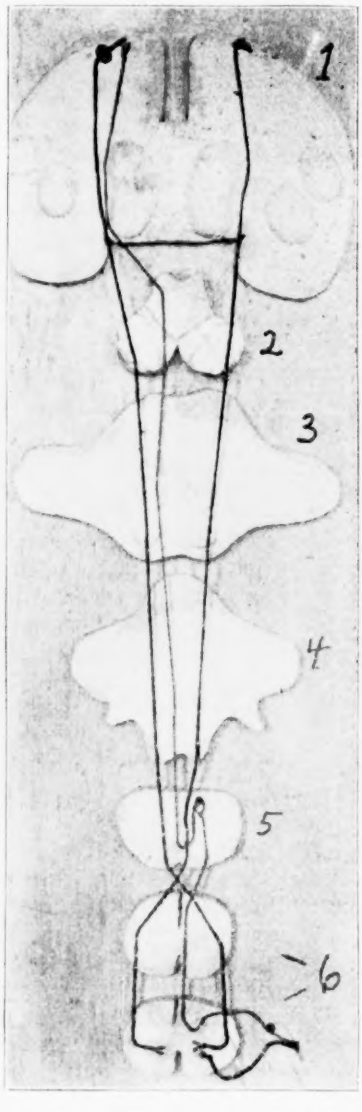

Fig. 1.—Motor and sensory conduction paths of the central nervous system, showing the peripheral and central neurons in a diagrammatic manner. 1. Transverse sections of cerebrum. 2. Midbrain. 3. Pons. 4. Upper medulla. 5. Lower medulla. 6. Spinal cord. (Modeled by a member of the sophomore class.)

in their hands." This remark, made by Dr. Samuel Chew in 1864, is especially applicable to the student of the present day. Not alone is the scalpel necessary in order to comprehend the structure of the human body, but the microscope, modeling, drawing, the study of serial sections, and other accessories must be utilized to make clear what to most students is a difficult and oftimes an uninteresting subject. Only one of the many helps in the study of anatomy will be presented in this

* Read before the Section on Neurology and Psychiatry of the Medical and Chirurgical Faculty of Maryland.

paper, namely, the use of clay modeling in the study of anatomy.

The modeling of bones from clay was first practiced at the Johns Hopkins Medical School. Since then it has been used at the Baltimore Medical College by Dr. Sydney Cone in teaching osteology,[1] also at the University of Chicago[2] and at the University of California.[3] At the latter school, Prof. J. Marshall Flint has used the method to record and preserve permanently the muscular variations found in the dissecting room.[4] If this method is used in other schools I have not been able to find any report of the work.

The method I wish especially to describe is the application of clay modeling to the central nervous system. The study of the macroscopic and microscopic anatomy of the brain and cord has been very diligently pursued during the past decade, while the subject has received more attention in the college curriculum than heretofore. The importance of teaching the subject to medical students can hardly be overestimated, as a thorough knowledge of the anatomy and physiology of the central nervous system lies at the foundation of organic nervous diseases. Dr. M. Allen Starr, in his recent text-book on "Organic Nervous Diseases," remarks: "As the knowledge of the centers and tracts has grown, as their location and action have been made clear, the meaning of symptoms previously perplexing has become plain." As a matter of fact, it is simply impossible to have a clear and concise picture of a disease of the nervous system without first understanding the structure of the part affected. The ideal way to accomplish this result would be to study, first, the gross anatomy of the brain and cord, and, second, to make serial sections in the three dimensions, transverse, horizontal and longitudinal, stained by the Weigert-Pal method, and study them carefully, not neglecting, of course, the study of the nerve cell and the neuroglia by the various staining methods, as the Nissl, Bethe, Bende and many others.

This necessitates not only a great deal of time, but also a vast amount of material and work. In fact, it is not practical in the medical course as now arranged, and is really post-graduate work. The best we may hope to do in the short time given this subject in most medical schools is to give the student a general idea of the subject and try to stimulate him to personal investigation after his college work is completed and he has time for research work.

The system of clay modeling tends to create an interest in this branch by presenting to the student's mind a realistic picture of a part that is otherwise very obscure when taught only from text-books or drawings. It requires the men to think for themselves, to use their several special senses, and when molding the various specimens, form in their minds a number of impressions that otherwise would be received only through the auditory and visual pathways. These multiple mental impressions serve to produce a lasting picture that will be easily retained. Dr. J. Marshall Flint very forcibly states this idea in the following words: "Every one apparently carries in his sensorium a very good stereognostic sense, which is easily developed by a little training. . . . To the student the advantage of the method lies in the

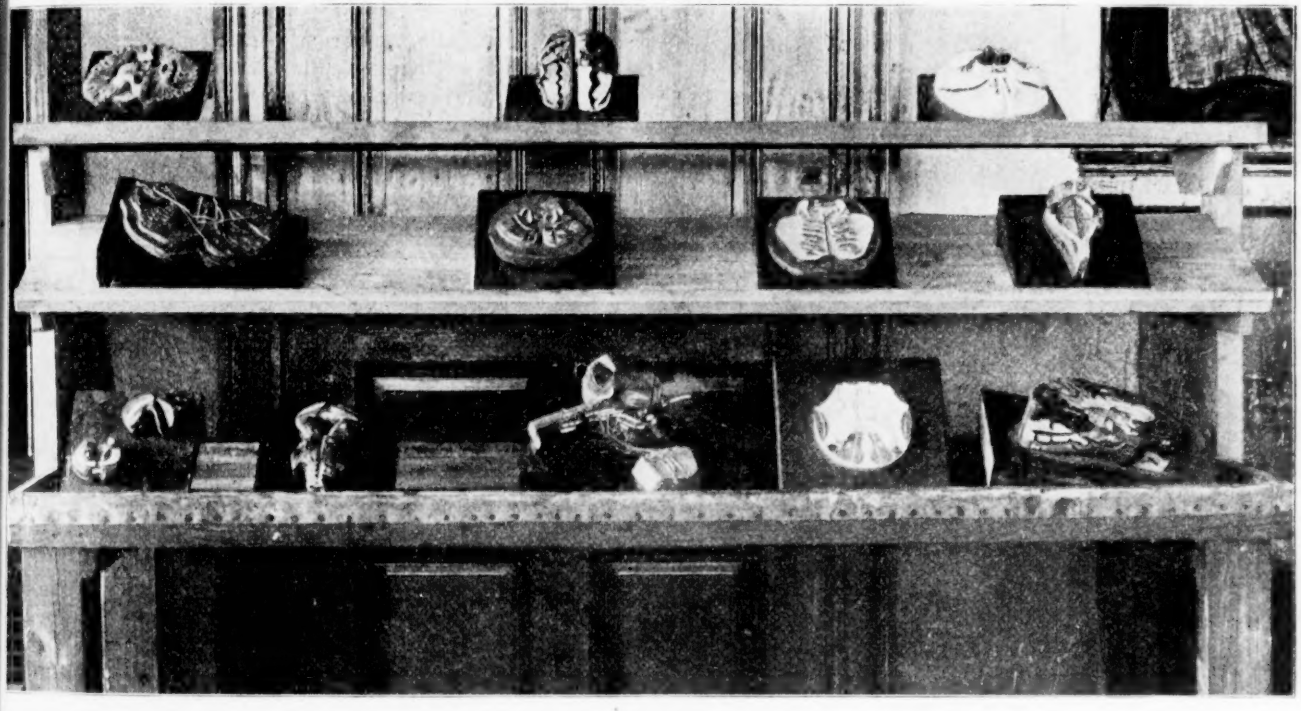

Fig. 2.—Modeling table on which are models made by members of the Class '05. Beginning with the upper row, the first model on the right represents the base of the brain and cranial nerves. 2. The cerebral hemispheres, with fissures, convolutions and motor areas colored. 3. A horizontal section of the cerebrum, basal ganglia, internal capsule, etc., represented by various colors. 4. (Middle row, right side.) A dorsal view of the medulla, pons and mid-brain, showing the fourth ventricle, position of nuclei of cranial nerves, funiculi of medulla, etc. 5. A transverse section of the pons, the longitudinal fibers are elevated. 6. A cross section of the mid-brain, the important structures are in relief. 7. A transverse section of the upper medulla, the arcuate fibers represented by various colors of floss, olivary bodies, nuclei, etc., raised. 8. (Third row, right side.) A view of the mesial aspect of the left cerebral hemisphere. 9. A cross section of the spinal cord, gray matter in relief, motor cells and tracts in different colors. 10. A longitudinal section of the medulla, pons and mid-brain, showing the position of the nuclei of the cranial nerves, from the third to the twelfth, and their superficial origin. The nerve fibers are represented by floss. 11. Ventral surface of medulla, pons and mid-brain. 12. Superior and inferior surfaces of cerebellum. Lobes and fissures in colors.

1. Johns Hopkins Hospital Bulletin, vol. xiii, p. 143.
2. Univ. Record, vol. vii, No. 3.
3. Johns Hopkins Hospital Bulletin vol. xiv, p. 78.
4. Journal of Medical Research, vol. viii, p. 496.

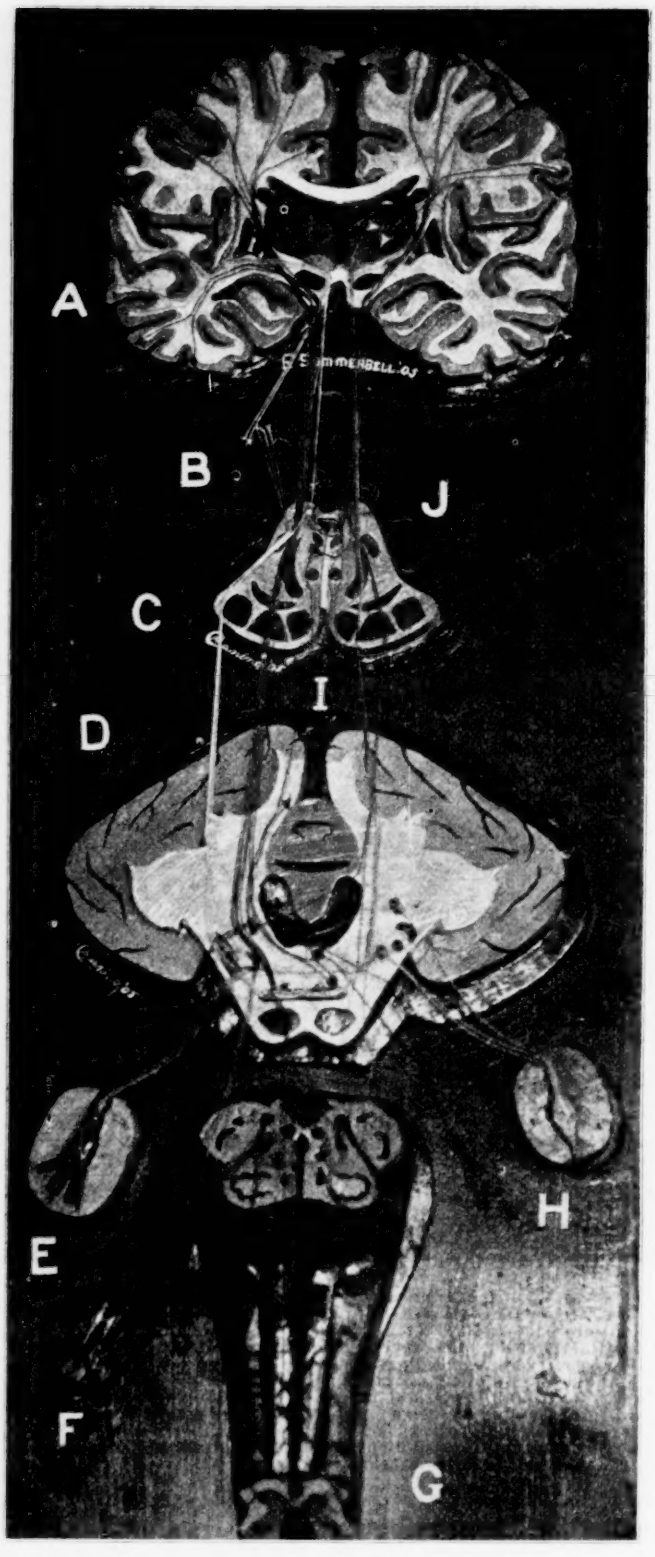

Fig. 3.—An original clay model of the central nervous system to represent the origin and course of the motor and sensory pathways and the relation of the nuclei of origin and of termination of the cranial nerves to these pathways; also the peripheral or ganglionic origin of the fifth, eighth, ninth and tenth nerves. This model was designed by the writer and executed by Messrs. Canino, Summerbell and Wasson of the Class of '05. As the color scheme of this model is not shown in the photograph, its simplicity and clearness of detail can not be appreciated. A. Transverse section of cerebrum, through the middle commissure. B. Internal geniculate body; auditory way station. C. Section of mid brain; pathways elevated. D. Transverse section of pons and cerebellum. E. Gasserian ganglion, under surface, with the three branches and motor root. F. The ganglia of the ninth and tenth nerves, showing the relation of the ninth, tenth and eleventh nerves just outside of the jugular foramen. G. The ventral surface of the medulla, above is seen a transverse section through the olives, below is a section of the spinal cord after the decussation of the pyramids. H. The ganglionic origin of the acoustic nerve. The entire course of this nerve is shown on the model, from the periphery to the temporal lobe of the brain. I. Nervus oculomotorius. J. Nervus trochlearis.

fact that he registers not only repeated visual images necessitated by the close study required to make a replica, but also utilizes his tactile sense and muscle sense as well. The superiority of the modeling over drawing lies in the fact that arbitrary laws of perspective are not required, and the student has the advantage of having his record of the subject in three dimensions, just as it exists in nature."[5] The practice of sketching microscopic sections of the nervous system is, of course, a great help to the student, but it does not give him an idea of the part in three dimensions, a point that Dr. Lewellys F. Barker emphasized so strongly in his lectures on the anatomy of the nervous system at the Hopkins in 1898. The value of a reproduction of a part of the nervous system in three dimensions is beautifully shown in the Sabin model of the medulla.[6]

The models made by the method advocated in this paper are at best crude, and are not to be compared to the artistic and realistic specimens produced by the Born reconstruction method.[7] This latter method requires a great deal of careful and exact work and is hardly practical for the average medical student. Bardeen speaks of this method as being "cumbersome and time-consuming." "Yet by no other method," he says, "can so accurate an idea be obtained of the form of those structures which, from their minuteness or complexity of relation, can not well be dissected out."[8]

The study of the central nervous system is confined as a rule to the sophomore year. During the session Weigert-Pal specimens of the brain and cord are projected on a large screen before the entire class, and the minute anatomy described, models and drawings being utilized whenever necessary. After the student has completed his dissecting he then begins to model certain portions of the central nervous system selected by the instructor. The ordinary potter's clay is used. The advantage of this kind of clay over the oil clay that is sometimes used, is that it hardens after a few days, when the models can be shellacked, colored and retained as permanent museum preparations, or kept by the students to study from; if, however, it is desired to use the clay again, or keep it soft a longer time, it is easily accomplished by adding water to the clay and then kneading it well, or keeping a wet cloth over the model, which renders it pliable and easy to handle until the model is finished, when it quickly hardens again. The models are made, not by being copied from stock preparations, but from actual gross specimens of the brain, which have been preserved in formalin; or, when modeling microscopic sections, showing the different tracts, etc., the student is allowed to refer to the drawing in the book or to the microscopic section under the dissecting microscope.

Models of microscopic sections are generally enlarged two or three times and a definite proportion maintained throughout the series. All important structures, such as the various tracts, the gray matter of the cord, the nuclei of the medulla and mid-brain, are elevated above the reticular formation. To show the entire course of pathways different colored floss is used. By this means the origin, course and termination of the various tracts is readily seen, as in Figures 1 and 3. The time usually required for the work varies from two to six weeks, depending on the facility with which the student completes the task.

When the modeling is finished the instructor reviews

5. Journal of Medical Research, vol. viii, p. 496.
6. Atlas of the Medulla and Mid brain, by Florence Sabin.
7. Johns Hopkins Hospital Bulletin, vol. xii.
8. Loc. cit.

the subject with each student and criticizes the models. The best specimens are selected for the museum case, are uniformly colored, labeled and remain college property, thereby forming a valuable collection at a very nominal cost. This also acts as an incentive for the students to do careful work, when they realize that their efforts are appreciated and their models, if good, remain as evidence of something real and substantial accomplished.

The real advantage of this method is that it serves to impress on the mind of the student information in a tangible and realistic manner. It has been said that the knowledge that a man can use is the only real knowledge, the only knowledge which has life and growth in it and converts itself into practical power. If this method does nothing more than stamp indelibly on the student's mind the essential facts of the structure of the nervous system, it will not have been used in vain. The general idea obtained by this method will form a foundation for their future studies and on which a more elaborate superstructure may be erected.

A PLEA FOR A STANDARD MEDICAL CURRICULUM *

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My experience as dean during the last few years impels me to make a strong plea for the unification of curricula in medical schools. You, with other representatives of medical colleges, will recall the fact that the state medical examining and licensing boards differ widely in the minimum standard requirements for license to practice medicine, and no sooner have we adapted our curricula to the requirements of one state when we are confronted with another adjustment of studies to meet the demands of another state, and failure to do so means refusal of recognition of the school, and the holder of our diploma is not even permitted to appear for examination. I venture to say that nearly every school had to make changes last year in order to comply with the requirements of the state of Michigan.

We all admit that the problem of the medical university is to supply the community with competent medical men, and that it is the duty of the state examining boards to see that none but qualified men are licensed to practice one of the most difficult and responsible of all professions; hence the necessity of a reasonable standard of medical qualifications.

Fortunately, we have adopted a minimum standard of preliminary education required for the study of medicine, and we should formulate a similar standard of medical education, based on uniform curricula.

With a fixed minimum standard for admission, and a definite course of medical studies, with the prescribed number of hours of didactic and practical work in each branch, we may hope for a more uniform product, and if this product should reach the requirements of some of our best state examining boards, the way to reciprocity between the boards will be open, and much time and annoyance will be saved in the transfer of students from one school to another.

A review of the examinations for medical licensure presented in a very able report by Dr. Charles McIntire to the American Academy of Medicine, May 11, 1903, shows that during the year 1902 4,510 applicants were examined; of these 3,781 passed and 729, or about 16 per cent., failed. The failures are not confined to graduates from indifferent schools, but include men from nearly every reputable school in this country, such as Harvard (1—117), Johns Hopkins (1—45), Columbia (9—173), Cornell (6—53), University of Pennsylvania (8—178), University of Michigan (9—77), University of Minnesota (2—86), University of Virginia (2—28), and Rush Medical College (6—232).

The conclusions to be drawn from such a result are: 1, That our products are not up to the standard adopted by some of the state licensing boards; 2, that the applicants have deteriorated since graduation; 3, that in some instances the candidates have passed the college examinations by dishonest methods.

A study of Dr. McIntire's paper on "The Personal Equation in Examinations for Licensure," read before the American Academy of Medicine in 1902, demonstrates that the charge frequently made against state examining boards that they are too severe in their exactions is not true, for the returns of papers marked by college professors and members of such boards show a remarkable uniformity in this, that with hardly an exception the men who failed would not have been licensed by any of the boards or faculties making returns, and as a matter of fact the colleges were more severe in their markings than the boards. But whatever the cause, these painful facts confront us, and the sooner the subject is thoroughly investigated the better it will be for medical education and the ultimate welfare of our graduates. I represent a small school, but should hail with delight any schedule of studies which would result in a well-rounded medical education, and I am sure every college represented in this association will cheerfully join in an effort to secure the desired end.

It is not a simple problem, when we consider the widely divergent views entertained as to the best methods of teaching and the time allotted the study of various subjects, but it seems to me that we may profit by the experience of the older schools, and, without wishing to make any invidious comparison, I may say that, in the judgment of Major Borden, a very competent and discriminating observer, the most harmoniously educated candidates for admission into the Army medical corps were graduates from the University of Pennsylvania. His judgment may be considered absolutely impartial, for he is not an alumnus of that school, and was then as now a teacher in the school with which I am connected.

How can we expect a harmonious product, when the very exhaustive report by Dr. George W. Webster, chairman of the Committee on Curriculum of the National Confederation of State Medical Examining and Licensing Boards, published in THE JOURNAL of the American Medical Association, Aug. 15, 1903, shows that the total hours vary from 5,000 in some to a little over 2,000 in other schools. The time devoted to clinical instruction varies from 2,000 to a little over 200 hours; over 500 hours are devoted to the subject of chemistry in some schools, and less than half as many in others; anatomy varies from over 1,200 as a maximum to 200 as a minimum. One school devotes over 400 hours to the study of physiology, while another has less than 100; medicine has over 1,200 hours in one, and less than 200 in another. In other schools such important subjects as physical diagnosis, pharmacology, etiology and hygiene are not taught at all.

Impressed with Dr. Borden's observations, and determined to profit by the experience of other schools, a

*Read at the annual meeting of the Association of American Medical Colleges, Atlantic City, N. J., June 6, 1904.

close examination of their method and the arrangement of studies was made, and we have adjusted our curriculum accordingly.

The demands of modern medicine are so exacting that the curricula in vogue fifteen, twenty or thirty years ago in some of our best colleges, no longer suffice to turn out a scientific physician, and I mean by that, a man who, because of his knowledge of the sciences on which medicine is founded, has such a firm grasp and a clear comprehension of his subject matter as will enable him to become not only a successful practitioner, but also an intelligent student of progressive medicine.

The foundation sciences of medicine are physics, chemistry, biology, anatomy, bacteriology, physiology and pathology.

A knowledge of physics as applied to medicine is essential, as has been well said by Professor Vaughan, in the application of all mechanical means for the correction of deformities, for the treatment of fractures and dislocations, for the study of errors of refraction, and in the use of the microscope, ophthalmoscope, laryngoscope, *x*-ray apparatus, etc., and its general importance is appreciated by the leading medical universities of Europe. It should be taught in the first year of the medical course. We devote 40 hours to this subject. We give 144 hours of chemistry in the first year, half of which are devoted to practical laboratory work. The time devoted to embryology, histology, osteology, general anatomy and physiology is shown by the table. Materia medica very properly should be studied in connection with the biologic sciences during the first year.

In the second year anatomy, physiology and chemistry, including physiologic, medical, toxicologic and sanitary chemistry, are completed, and bacteriology, pathology and pharmacology are begun; 24 hours are devoted to minor surgery.

The student having acquired a fair knowledge of his foundation studies during the first two years, after additional instruction in pathology and physical diagnosis, is now prepared to enter on the study of medicine, surgery, obstetrics, gynecology, neurology and therapeutics, while a study of hygiene, which is the application of the laws of physiology, chemistry, physics, meteorology, pathology, epidemiology and bacteriology to the maintenance of the health and life of individuals and communities, is not only necessary for the prevention, but also the cure, of diseases and serves the additional purpose of reviewing and applying the knowledge of the sciences just mentioned.

All of the practical subjects, such as medicine, pediatrics, surgery, operative surgery, obstetrics, gynecology, neurology and mental diseases, extend over a period of two years and are taught simultaneously to third and fourth year students, both didactically and at the bedside.

In the fourth year, in addition to the practical branches, we give our students special instructions in dermatology and syphilis, genito-urinary diseases, laryngology, rhinology, ophthalmology and otology, military surgery, state medicine, morbid anatomy and medical zoology. The course in medical zoology has special reference to the animal parasites in the human subject, supplemented by practical laboratory exercises in the microscopic examination of meat for trichinæ spiralis, and of feces for determining the presence of parasites, and we have found this course very helpful to our students and of extreme practical importance. As a matter of fact, one of our graduates, Dr. Ashford, was the first to demonstrate that the grave forms of anemias found in Porto Rico are due to uncinaria Americana; the hook-worm disease has been found by Dr. Stiles to be quite frequent in our southern states, and we all know how frequently trichiniasis is mistaken for typhoid fever.

Our association was established for the purpose of promoting medical education, and yet, instead of leading others into the right path, we have been driven by the state medical examining boards and a strong public opinion, as manifested by the American Medical Association, to raise our standard of minimum requirements for admission into medical colleges. New Hampshire, New York, Pennsylvania, Ohio, Indiana, Illinois, New Mexico and Colorado practically demanded a higher standard long before we raised it, and, as a result, the diplomas of some schools are not recognized, and graduates from such schools can not appear for examination.

More recently, Illinois and Michigan have taken the initiative in establishing a minimum standard of medical education, and the example of these states is very certain to be followed by others in the near future. If we wish to retain the confidence and respect of the American medical profession, it is our duty to equip our graduates in such a manner that their diplomas will not be discredited by any state in the Union, because, in the opinion of the board, the school granting it does not fulfill the established minimum standard of medical education. Apart from the moral and ethical aspects of the question, however, I believe it will be in the highest degree good business policy to appoint a committee, which should co-operate with a similar committee appointed from the National Confederation of State Medical Examining and Licensing Boards, for the purpose of establishing such a standard.

There are now 154 colleges in the United States. Of these, 121 are regular and only 66 are members of the Association of American Medical Colleges. The number of students vary from 6 to 1,047 in the different schools. It seems to me that if the methods of teaching were more uniform the students would be more evenly distributed, which would be an advantage to students and schools alike. There is much to be said in favor of small schools, where the number of students does not exceed 250, or from 60 to 70 in a class, as it enables each student to come into more intimate relation with the teachers in laboratory and hospital work, and in connection with the system of recitations and conferences, which should be a part of the curriculum, makes instruction more personal and adapted to the special needs of the individual. The time must come—indeed, it is close at hand—when the advantage of smaller classes will be appreciated, provided we are prepared to do honest and thorough work.

It must be obvious that the reason some schools have too many students and others so few is due to the respective estimate of the relative merit in which they are held by the members of the medical profession, who are usually appealed to as referees by prospective medical students. I can not agree with those who believe that there should be a different standard in different schools and who consider it a Utopian idea to expect that all the medical schools in the country should be based on a uniform curriculum, any more than the various colleges or academies. It seems to me that the standards of state boards are no higher for the graduates of these schools than for those of the smaller schools; all must possess the same qualification. The subject of graduate work is another question. There is, of course, no reason why schools engaged in turning out special-

sts and teachers should not vary their curricula with the special needs of the student.

I realize that the weakness of our smaller schools does not so much in the lack of funds or endowments as in the lack of methods. It does not require expensive and pretentious buildings to do the work, but it does require competent men and proper laboratory equipment and clinical facilities.

Fortunately, men always will be found in the profession willing to work in the interest of higher medical education, regardless of pecuniary reward. My own school has no endowment whatever, it being the only school in Washington which abolished night sessions ten years ago, resulting, as was anticipated, in financial losses; but we have the satisfaction of knowing that our product has improved. We have only 140 students, but in spite of this we have equipped our laboratories and established a university hospital.

The present cost of microscopes, chemical, bacteriologic and physiologic apparatus puts them within the reach of every school. A complete set of physiologic apparatus, sufficient for ten to fifteen students, can be purchased for $75.00 from the Harvard University; four sets would be quite ample in a class of 40 to 60 students. One microscope for every two students will answer very well until the funds will permit an instrument for every student, which, of course, is more desirable. It goes without saying that no school should be permitted to enter our ranks unless it is properly equipped, and no school should give courses in junior and senior studies unless it has also suitable facilities for clinical teaching. When this is done, will anyone deny that the school with 250 students will not turn out as good, if not a better, product than the large schools? How many times in our large schools is the average student called to the operating table to witness a cataract operation or abdominal section at close quarters, or to examine the patient before an operation and give to the professor and the class his opinion as to the pathology, diagnosis and methods of treatment? What is true of the surgical is equally true of the medical cases.

The time will come when all schools will be great, not in numbers, but in the quality of the product, and when this is accomplished I predict there will also be a leveling in the number of students. The average American is too practical to travel thousands of miles when he can secure equal, or possibly superior, advantages nearer home. Another advantage from a purely business point of view will be the disintegration and abandonment of projected schools unwilling to bring their institutions up to a reasonable standard. Who will patronize a school whose diploma is discredited by the majority of state examining boards, and who will dare to establish a new school unless fully equal to meet the requirements? If they should be established, the state boards will take such action as will prevent their doing any mischief.

We do not need more schools, but we need better schools. Every advantage is to be gained by the smaller schools from a uniform standard of curricula, and there is no good reason why we should not all survive in the face of an ever-growing and powerful nation, especially when there will be a more equal distribution of students with improved methods of instruction. All had a humble beginning, but by perseverance and honest work we may hope to reach the same high plane of efficiency which some have attained. Progress has crowned our past. Let our conduct raise no blush on the cheek of posterity.

Compulsory action is always to be deprecated, and yet this stares us in the face; on the other hand, much good can be accomplished by a joint deliberation between the colleges and the state boards of medical examiners, and the formation of a standard of medical education arranged in a logical order, specifying the minimum number of hours required in each study, and which will meet the views of the educator as well as the licensing boards.

In order to comply with the requirements of the Michigan State Board of Examiners, we have arranged a schedule for the Medical School of Georgetown University, which is at least suggestive.

It will be seen that the requirements do not differ materially from the average obtained in 43 medical colleges in the United States, and is really in excess of the standard curriculum recommended by a special committee of the National Confederation of State Examining and Licensing Boards, which places the minimum requirement at 3,600 hours.

The requirements of the Michigan State Board of 4,240 hours may be considered excessive, and might with advantage be reduced to 4,000 hours, devoting about 950 hours to each of the first two years' work and 1,150 hours each to third and fourth year work.

I have purposely devoted less time to freshman and sophomore studies, as the acquisition of the sciences taught during the first two years really involves more of a mental strain than the work of the third and fourth year.

CURRICULUM AT THE SCHOOL OF MEDICINE, GEORGETOWN UNIVERSITY

Based on the 4,200-hour standard prescribed by the Medical Examining Board of the State of Michigan, in force during the session of 1903-1904:

	Lecture	Laboratory work.	Total.
First Year—			
Physics	20	20	40
Chemistry	72	72	144
Osteology	24	..	24
Anatomy	150	180	330
Histology	24	100	124
Embryology	35	50	85
Physiology	75	40	115
Materia Medica	34	12	46
	434	474	908
Second Year—			
Anatomy	100	104	204
Physiology	120	40	160
Chemistry	72	96	168
Bacteriology	50	100	150
Pathology	60	120	180
Pharmacology	45	15	60
Minor surgery	12	12	24
	459	487	946
Third Year—			
Pathology	38	38	76
Clinical microscopy	..	62	62
Physical diagnosis	36	36	72
Medicine	90	180	270
Surgery	120	125	245
Orth. surgery	12	12	24
Obstetrics	50	30	80
Pediatrics	15	30	45
Gynecology	24	60	84
Neurology	18	18	36
Mental diseases	15	15	30
Therapeutics	90	..	90
Hygiene and dietetics	40	..	40
	548	606	1154
Fourth Year—			
Morbid anatomy and medical zoology	45	45	90
Medicine	90	180	270
Surgery	120	125	245
Orthop. surgery	12	12	24
Obstetrics	50	30	80
Pediatrics	15	30	45
Gynecology	24	60	84
Neurology	18	18	36
Mental diseases	15	15	30
Electro-therapeutics	12	12	24
Laryng. and rhinology	24	48	72
Opthalm. and otology	30	60	90
Dermatology and syphilis	12	24	36
Genito-urinary diseases	18	18	36
State medicine	30	..	30
	515	677	1192

First year	908
Second year	946
Third year	1154
Fourth year	1192
	4200

Physics		40
Chemistry		312
Anatomy		558
Histology and embryology		209
Physiology		275
Materia medica, pharmacology and therapeutics		196
Bacteriology		150
Pathology		256
Clinical microscopy		62
Morbid anatomy and medical zoology		90
Physical diagnosis		72
Medicine		540
Surgery	514	
Orthop. surgery	48	
		562
Obstetrics		160
Gynecology		168
Pediatrics		90
Dermatology and syphilis		36
Genito-urinary diseases		36
Laryng. and rhinology		72
Opthalmology and otology		90
Neurology		72
Mental diseases		60
Electro-therapeutics		24
Hygiene and dietetics		40
State medicine		30
		4200

PROPOSED STANDARD OF A 4,000 HOURS' MEDICAL COURSE.

First Year—	Lectures and Recitations.	Laboratory Work.	Total.
Physics	20	20	40
Chemistry	72	72	144
Osteology	24	..	24
Anatomy	120	172	292
Histology	24	100	124
Embryology	35	50	85
Physiology	105	40	145
Materia medica	34	12	46
	434	466	900
Second Year—			
Anatomy	106	78	184
Physiology	90	40	130
Chemistry	72	96	168
Bacteriology	50	100	150
Pathology	62	140	202
Pharmacology	45	15	60
Minor surgery	12	12	24
	437	481	918
Third Year—	Lectures and Recitations.	Laboratory or Clinical Work.	Total.
Pathology (morbid anatomy and medical zoology)	38	42	80
Physical diagnosis	36	36	72
Medicine	90	180	270
Surgery	120	125	245
Orthopedic surgery	12	12	24
Obstetrics	50	30	80
Pediatrics	15	30	45
Gynecology	24	60	84
Neurology	18	18	36
Mental diseases	15	15	30
Therapeutics	90	..	90
Hygiene and dietetics	36	..	36
	544	448	1,092
Fourth Year—			
Medicine	90	180	270
Surgery	120	125	245
Orthopedic surgery	12	12	24
Obstetrics	50	30	80
Pediatrics	15	30	45
Gynecology	24	50	74
Neurology	18	18	36
Mental Diseases	15	15	30
Electro therapeutics	12	12	24
Laryngology and rhinology	24	48	72
Ophthalmology and Otology	30	60	90
Dermatology and Syphilis	15	25	40
Genito-urinary diseases	15	15	30
State medicine	30	..	30
	470	620	1,090

First year	900
Second year	918
Third year	1,092
Fourth year	1,090
	4,000

CONCLUSION.

In conclusion let me reiterate that I represent a small, struggling medical school, and if I differ from the views expressed by others, I do so with great hesitation. Apart from the ethical aspect and the imperative demands for reform throughout the medical profession, I consider it in the highest degree good business policy to advocate a plan which will improve the quality of the product and equalize the number of students, a result which can not fail to be acceptable to the larger schools and extremely profitable to the smaller schools, and I therefore beg to offer the following resolution:

Resolved, That a Committee on National Uniformity of Curricula be appointed, to co-operate with a similar committee appointed by the National Confederation of State Medical Examining and Licensing Boards, for the purpose of presenting a minimum standard of medical education, together with such recommendations as the committee may deem proper as to the division of the subjects in a four-year graded course. Said report to be presented at the next annual meeting, and to be printed and distributed at least one month before said meeting.

COMPARATIVE STANDARDS OF MEDICAL EDUCATION.

Subjects.	Proposed Standard. Lectures.	Proposed Standard. Laboratory.	Proposed Standard. Total.	Average 43 Colleges.	Michigan.	Georgetown. Present Standard.	State Medical Exam. Standard.
Physics	20	20	40	.....	.....	.....	.....
Chemistry and Toxicology	144	168	312	375	350	352	340
Anatomy	250	250	500	519	400	558	500
Histology and Embryology	59	150	209	219	200	209	200
Physiology	195	80	275	276	260	275	250
Materia Medica, Pharmacology and Therapeutics	169	27	196	118	234	196	110
Bacteriology	50	150	150	131	230	150	115
Pathology	100	182	282	295	220	256	200
Morbid Anatomy and Medical Zoology	.....	.....	.....	.....	.....	90	.....
Physical Diagnosis	36	36	72	61	120	72	55
Medicine	180	360	540	544	540	540	500
Surgery and Orthop. Surgery	276	286	562	596	510	562	540
Obstetrics	100	60	160	177	100	160	150
Gynecology	48	110	158	145	220	168	130
Pediatrics	30	60	90	72	110	90	60
Dermatology and Syphilis	15	25	40	64	60	36	50
Genito Urinary Diseases	15	15	30	.....	90	36	.....
Laryngology and Rhinology	24	48	72	67	260	72	55
Ophthalmology and Otology	30	60	90	106		90	90
Neurology	36	36	72	82	120	72	75
Mental Diseases	30	30	60	27		60	25
Electro Therapeutics	12	12	24	.....	30	24	.....
State Medicine	30	.....	30	.....	30	30	.....
Hygiene and Dietetics	36	.....	36	33	54	40	30
Clinical Microscopy	.....	.....	.....	.....	72	62	.....
	1885	2115	4000	3937	4240	4200	3540

CASE OF TETANUS SUCCESSFULLY TREATED BY ASPIRATION OF THE CEREBROSPINAL FLUID AND INJECTION OF MORPHIN-EUCAIN AND SALT SOLUTION.

JOHN B. MURPHY, A.M., M.D.
CHICAGO.

History.—Alex. S., aged 8 years, was admitted to Mercy Hospital July 10, 1904. He is one of eight healthy children and has had no previous illness. Seven days preceding admission, while crossing a dirty street, he stepped on a piece of glass, cutting his foot in two places. He received no medical treatment, except that the foot was washed by his father and applications made of a lotion and of antiphlogistin. This was prescribed by a physician without seeing the case. Five days later (six days after the accident) stiffness of the jaw began and he was seen for the first time by a physician. At this time he had had for twenty-four hours pronounced trismus and spasm of the muscles of the neck, with occasionally contraction of the muscles of the back, but not severe. There had been no chills, fever, nor sweats. There was little redness or irritation around the wounds.

Hospital Examination.—When admitted to the hospital there was a wound one inch and a half long on the outer aspect of the anterior portion of the foot, and a smaller wound on the inner side near the heel. The trismus was pronounced, and every three to five minutes there was contraction of the muscles of the back with pronounced opisthotonos.

Surgical Treatment.—The patient was anesthetized. The

anterior wound appeared healed, but on separating the edges a piece of glass and some debris were found in it. A smaller piece of glass with pus was found in the posterior wound. These had been there for seven days. The pus was examined for tetanus bacilli and none found; an anaerobic culture was made with no result. The wounds were curetted, cauterized with a 95 per cent. solution of carbolic acid and packed with iodoform gauze. The patient slept a short time after the anesthetic. Then the convulsions came on every ten to fifteen minutes and lasted one to three minutes. His temperature was 99.8 degrees; pulse 110.

Treatment by Antitetanic Serum.—On July 11 he was given three full doses of antitetanic serum, without effect. The convulsions increased in frequency and were almost continuous.

Treatment by Morphin-Eucain Injections.—On the morning of July 13 a lumbar puncture was made and 16 c.c. of cerebrospinal fluid withdrawn. It was cloudy in its appearance to the naked eye. At the same time, through the needle, 3 c.c. of the following solution were injected into the subarachnoid space:

R	B. eucain	gr. iss	.09
	Morphin sulphate	gr. 1/3	.02
	Sodium chloridi	gr. iii	.18
	Distilled water	℥iiiss	105

This had been sterilized by boiling. The patient slept four hours immediately following the injection, and through the night slept an hour and a half at a time. The spasms were of shorter duration and he had only eight in the succeeding twenty-four hours. His temperature the evening of July 13 was 102 degrees and his pulse 120.

Course and Recovery.—On July 14 a spasm occurred at about 4 a. m. which was the most severe he had had since the injection. At 11 a. m. another puncture was made and 15 c.c. of fluid withdrawn. This looked comparatively clear. Four c.c. of the above solution were again injected. He slept four hours following this injection. Pulse was 100, temperature 100 degrees. He had eight spasms between this and noon of the following day, July 15, when they began to increase in frequency. The spinal canal was again punctured, 15 c.c. of fluid withdrawn and 4 c.c. of the morphin-eucain solution injected. He had no spasm until late in the afternoon and only an occasional mild spasm through the night. At noon, July 16, 15 c.c. of fluid were withdrawn and 4 c.c. of the solution injected.

July 17 his condition was so good that no injection was made. In the night the spasmodic contractions again occurred, and by the next morning they were being repeated every hour, though of mild severity. He could now talk well and had had a good night's rest. On July 19 the usual aspiration and injection were made. On July 20 he had a few very mild spasms.

On the morning of July 21 the spasms were a little more severe, although at intervals of three or four hours. At noon there was another aspiration and injection made. Following this there was no spasm; his condition improved; the trismus gradually subsided and he was discharged cured July 31.

THE DOSAGE.

It will be noted that the quantity of morphin in each injection was 1/75 of a grain, and of eucain 3/50 of a grain. These were extremely small doses, and as it was my first case I feared to increase the quantity. There was no sweating, headache nor collapse, symptoms so frequently noted after injections of cocain for spinal analgesia. It will be recalled that at the time eucain was first used for analgesic purposes, it was believed the injection of any solution in the spinal canal would produce these symptoms. The injections immediately relaxed the spinal muscles, and they remained relaxed for considerable periods of time, hence the patient had a good opportunity to sleep and rest from the time he received the first injection. It is my belief that the strength of the eucain portion of the solution should be increased so the patient would receive 1/6 or even 1/3 of a grain with each injection. Furthermore, that the aspirations and injections might be repeated with greater frequency. There seemed to be no ill effect from the withdrawal of the fluid, and after the third day the fluid showed no polynuclear leucocytes.

SUGGESTIONS FOR FUTURE CASES.

I believe eucain is much safer than cocain; first, because it admits of boiling for sterilization; and second, because there is less idiosyncrasy to intoxication. As these patients die, many of them from exhaustion from the spasms, and some from the severity of the spasms of the respiratory muscles themselves, I feel that this can be entirely overcome with the injections. I have not had an opportunity to try it on other cases, and publish this merely as a preliminary report—as this is the season in which tetanus is most frequent—that others may be induced to try it. I do not know whether the benefit was attributable to the extraction of the cerebrospinal fluid or to the injection of the solution, or both. The fact the fluid withdrawn on the first, second and third days contained pus, and after that none, would lead one to believe that possibly the diminution of pressure in the cerebrospinal cavities aided the fluid in overcoming the infection, just as in epidemic cerebrospinal meningitis, repeated spinal puncture relieves the pressure and gives the greatest percentage of recoveries.

There is no reason why the cerebrospinal cavities can not be washed out in severe infections with salt or other neutralizing solutions by the following method, which I shall put into practice in the first case of cerebrospinal meningitis coming under my observations: First, make a drill puncture of the cranium over the lateral ventricle; insert a fine needle until the cerebrospinal fluid escapes; second, insert a needle into the spinal canal in the lumbar region and allow a normal salt solution to flow, under hydrostatic pressure, from the needle in the right ventricle, down through the foramen of Magendie and the spinal canal, to, and out of the needle in the lumbar area. This can be accomplished on the cadaver, as I have demonstrated. Permanent drainage of the cerebrospinal canal has been almost uniformly fatal, and should not be instituted.

Special Articles.

THE UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PART I. A HISTORICAL SKETCH.

(*Continued from Page 403.*)

(C) DR. HAMILTON'S ADMINISTRATION (1879-1891).

In 1879 Surgeon-General Woodworth died, and was succeeded by Surgeon John B. Hamilton. The new head of the service vigorously pursued the policy inaugurated by his predecessor in office. The regulations were revised and brought up to date, embodying the substance of circulars and orders issued since 1873. Stricter accountability for public property, improved discipline, greater amount of relief furnished at a relatively less cost, and greater accuracy in the medical statistics were the objects attained by rigid enforcement of regulations.

During the first four years of Dr. Hamilton's administration, the National Board of Health, created by the law of 1879, was in active existence, and the public-health work of the service did not increase in consequence. The law under which the National Board of

EDITOR'S NOTE.—This article began July 30. The Army Medical Department was discussed May 7, 14, 21, 28 and June 4.

Health operated expired by limitation, June 2, 1883, and the Marine-Hospital Service took charge of national quarantine and public-health matters under the quarantine law of 1878, which then became operative. A contingent appropriation was made by Congress for the prevention of the introduction and spread of epidemic diseases and the maintenance of quarantine at points of danger. This appropriation supplied the necessary funds for quarantine and epidemic work, which the quarantine law of 1878 failed to provide.

In 1884 the assignment and collection of the hospital tax from seamen was abolished, and the same act provided that "the expense of maintaining the Marine-Hospital Service should hereafter be borne by the United States out of the receipts from duty on tonnage provided for by this act, and so much thereof as may be necessary is hereby appropriated for that purpose."

In January, 1886, Surgeon-General Hamilton reresumed the publication of the "Weekly Abstract of Sanitary Reports," as required by the act of 1878, which had been temporarily suspended during the activity of the National Board of Health.

The quarantine stations which were established by the National Board of Health were mainly refuge stations, and when the service took charge of these in 1883, their equipment was deficient. Surgeon-General Hamilton recommended that "the national quarantine stations be made permanent, and that they be equipped with all the necessary appliances known to modern sanitary science for the treatment of infected vessels and their cargoes, so that not only may immunity from the importation of contagious diseases be secured at those stations, but such security be had with the least possible obstruction to commerce." In 1888 a law was passed perfecting the national quarantine system on the Atlantic and Gulf coasts, and providing for the establishment of three stations on the Pacific coast. An appropriation of $500,000 was made to carry out the purposes of this act.

During the first year of Surgeon-General Hamilton's administration, the Secretary of the Treasury issued a circular, which specified that all persons applying for either renewal of license or original license, as pilots of steam vessels, should be required to undergo a visual examination, to determine the presence or absence of color blindness, and that the examination should be made by a medical officer of the Marine-Hospital Service, whose certificate of good color sense should be essential to the issuance of a license.

Surgeon-General Hamilton provided a "Handbook for the Ship's Medicine Chest," for the guidance of masters of vessels carrying no doctor. Section 4569 of the Revised Statutes compelled the carrying of a medicine chest by such vessels, but neither specified what the contents should be nor provided instructions for its use. This "Handbook" supplied the deficiency, gave lists of necessary medicines, and in simple language directed the masters what to do when skilled medical assistance was unobtainable.

During this period the medical officers were required to report not only on the sanitary conditions of their hospital, but also on existing conditions in the cities in which they were stationed. The hygiene of the merchant marine continued to receive the attention of the service, and from the control of outbreaks of smallpox or other contagious disease among sailors, especially on western lakes and rivers, it was but a short stride to the supervision of local epidemics and the prevention of their spread.

The service assisted the local authorities in controlling the epidemics of yellow fever in Florida and Texas in 1882, and in all subsequent epidemics have succeeded by the detention camp in preventing the spread of the disease without resorting to "shotgun" quarantine.

The first detention camp was established (1888) on the south bank of St. Mary's River (the boundary between Georgia and Florida), and was called Camp Perry. Refuge camps near infected cities were not new, but an inland quarantine where suspects were detained only long enough to demonstrate that they were not infected and then permitted to proceed north was a novel procedure at this time.

In 1889 the Secretary of the Treasury detailed Surgeon-General Hamilton to attend the Sixteenth International Medical Congress at Berlin, Germany, and to study European hospital construction. The surgeon-general visited may large European cities, studied their hospitals, and made an exhaustive and critical report on the systems employed in their construction.

The regulations of the service since the reorganization required that all applicants for the service should be examined by a board of officers, and appointed to the lowest grade, that of assistant surgeon. The examinations were severe and the standard of excellence demanded was high, and in consequence 80 per cent. of the applicants were rejected. The surgeon general considered statutory provision confirming the regulations on this point necessary for the maintenance of this high standard of excellence, and in 1889 Congress enacted that, after passing a satisfactory examination before a board of service officers, the applicant was to be commissioned by the President, by and with the advice and consent of the Senate, appointment to the service to be made only to the lowest grade, that of assistant surgeon.

Assistant surgeons were to be promoted to the rank of passed assistant surgeon after four years' service and the passing of an examination, and promotion to the rank of surgeon only after due examination.

To provide additional protection to the country at large in preventing the spread of contagious disease from one state or territory to another, the interstate quarantine law of 1890 was passed by Congress. In June, 1891, Supervising Surgeon-General Hamilton resigned, and was succeeded by Surgeon Walter Wyman, who was then chief of the quarantine division.

(To be continued.)

TRAVEL NOTES.

IV.*

LEPROSY IN THE HAWAIIAN ISLANDS. THE PROPOSED ESTABLISHMENT OF A GOVERNMENT BACTERIOLOGIC INSTITUTE.

NICHOLAS SENN, M.D.
CHICAGO.

HONOLULU, July 14, 1904.

The inhabitants of the beautiful Hawaiian Islands, comparatively free from the devastating infectious diseases so long as they enjoyed the blessings of isolation from the outside world, have been made painfully aware of the dangers of the dissemination of disease from man to man. They have experienced the benefits and blessings as well as the evils and curses arising to them from a new civilization brought to their

* The first article in this series, "Travel as a Means of Post Graduate Medical Education," by Dr. Nicholas Senn, appeared in THE JOURNAL, July 23, page 261; the second, "Is a Trip to Europe Worth Its Cost to the Medical Man?" by Dr. Lewellys F. Barker, July 30, page 328; the third, "Spain and Ramon y Cajal," by Dr. Lewellys F. Barker, Aug. 6, p. 403.

palm-clad shores by white men in search of new lands and fabulous wealth. Some fifty years ago the first case of leprosy came to the little island empire from the distant Orient. As usual with the primitive peoples of the islands of the South Sea this dreadful disease found a fertile soil in the natives, with so little resistance to all infectious diseases, acute or chronic. It spread with alarming rapidity, and it became evident unless rigid measures were enforced in the way of absolute and early segregation, that from this cause alone, the entire population would become practically extinct in less than half a century. In 1866 the number of known lepers had reached 105; in 1876, 677, in 1886, 590, in 1897, 1,100, and when I visited the Molokai settlement two years later I found that the number of lepers had reached 1,300.

Fig. 1.—Tubercular leprosy in a young native girl.

When I visited the islands a second time I was informed that the number of lepers, owing to the fearful mortality among them, had been reduced to 1,100. The nationalities of the lepers is shown by a report made in 1898, of which number 984 were natives, 62 half castes, 32 chinese, and 5 Americans.

SEGREGATION.

When it was found necessary to enforce segregation a commission was appointed to select the most favorable location, climatic and otherwise, for the unfortunate exiles. This commission acted wisely in selecting a tongue-like projection of the island of Molokai, isolated on two sides by the ocean and from the remaining part of the island by an almost perpendicular cliff, the Pali, 2,000 feet in height, which is crossed by those who are permitted to visit the settlement over a shelf-like path hewn out of the solid rock. A trip over such a mountain path demands much physical exertion, and more than an ordinary interest in making the visit. The laws regulating and enforcing segregation are more stringent here than anywhere else. They include a divorce of married people if the man or wife so desire, and exclusion from society for the remainder of the leper's life. If the healthy husband or wife is willing to share the fate of the doomed consort she or he is permitted to share the banishment, with the understanding that the exile is for life, and with no expectation of ever seeing remaining relatives again, this side of eternity. On the other hand, the exiled man or woman is free to marry again, an inmate of the leper settlement. The government recognized that what certainly appear as hard, and even cruel, measures, were intended for the benefit and protection of the mass of the population. That these severe laws met first with violent opposition on the part of the lepers and their devoted relatives and friends is very natural, among a people who are very unselfish and tender. The officers were intrusted with carrying the laws into effect. The physicians who made the diagnosis and the police who

Fig. 2.—Tubercular leprosy in a Hawaiian.

had to apprehend the suspect and attend to their transportation to the settlement met with many difficulties, and in some instances sustained personal violence.

A FIGHTING LEPER.

There is one instance on record where a leper resisted not only the police force but an entire company of infantry. He hid himself in a mountain cave, accompanied by his faithful wife, the only access to which was over a narrow path, where men had to walk in single file. He supplied himself with firearms and ample ammunition, and declared that anyone who came within range of his gun would be killed. When the soldiers were sent to secure him he only did what he had threatened, and killed the first four who headed the file. The attempt was never repeated, and the desperate leper had the satisfaction of being relieved of sufferings in his lonely cave, being cared for by his devoted wife. Just when he died and where his mutilated body found its last resting place no one knows, as his wife took the precaution to hide his remains in some lonely mountain place, to protect it from being interfered with, and her efforts, so far, have been successful.

THE LEPER SETTLEMENT.

The leper settlement is made up of two villages, on opposite

sides of the promontory. From the very beginning the unfortunate inhabitants of this strange and ideal settlement have been treated in the kindest and most humane manner. Under royal rule, when the islands formed a republic, and now under a territorial form of government, large sums of money, on an average $100,000 a year, have been spent to procure all possible comfort. The settlement has churches, schoolhouses, stores, and even places of amusement. The lepers live in little homes, to many of which a pleasant garden spot is attached. This parental care on the part of the government, and the home life are what have removed all opposition to segregation.

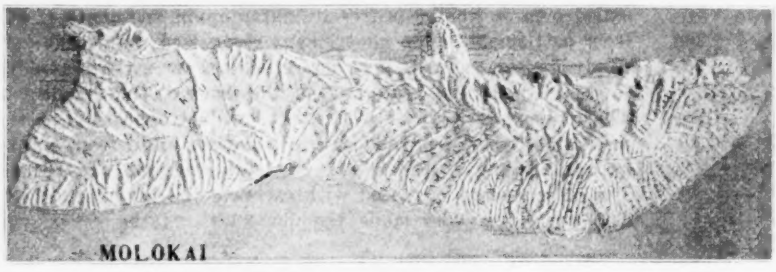

Fig. 3.—Island of Molokai.

Lepers now seek admission to the settlement of their own accord. It would be difficult, and, I think, impossible to find a place better adapted by nature for such a purpose. The equable climate all the year around, the cooling, refreshing land and sea breezes, the surf baths, the abundance of salt-water fish, the excellent water supply and natural sewerage advantages furnish comforts and advantages, by nature and man, that could not be found anywhere else.

Fig. 4.—Anesthetic leprosy in a native woman.

A GOVERNMENT BACTERIOLOGIC LABORATORY AND STATION FOR THE SCIENTIFIC STUDY OF LEPROSY.

The government owes an important duty in furnishing protection to its citizens against infectious diseases. To the physicians leprosy still remains a strange disease. We know its microbic cause, we have become somewhat familiar with its pathology, we are powerless in curing it, or even in retarding its ravages and relentless course. A successful treatment must and will be found. There is no other place in the world where more effective work could be done. The lepers are here. They are a docile, gentle people, who will heartily co-operate with a scientific man to find the much-needed remedy. The annexation of the Hawaiian Island places this great field of scientific research within easy reach of the United States. Little Japan has placed a small colony of lepers and sufficient funds at the disposition of the distinguished Professor Kitasato to discover a remedy for millions of people scattered all over the world. Why can not the rich and enterprising government of the United States embrace this great opportunity to find a remedy for such a loathsome and hopeless disease like leprosy. With the acquisition of island possessions in the Pacific and Atlantic the danger of the spread of the disease in our own country is being vastly increased. Let the United States take care of the leper settlement at Molokai, spend $100,000 in the erection of a laboratory for the study of leprosy, pay a recognized scientist at its head with a salary of $10,000 a year, and thus place itself in line with other countries, who are now doing what they can on a much smaller scale in bringing leprosy within range as a curable disease. Hawaii would hail such a step with joy, to be relieved of the heavy annual expense in caring for its leper children, and in co-operating with the general government in scientific research, calculated to lead to the discovery of a cure for a disease so widely spread, and which has proved itself so obstinate to all kinds of treatment so far suggested and

Fig. 5.—Baldwin Home for leper boys, Kalawao, Molokai.

tried, and for the dissemination of which stern exile has been the only means. The time is ripe for the United States to act. Let the mass of the American medical profession agitate this matter and let the delegates bring it to the attention of our energetic and humane congress and such prompt action is sure to bring about the desired result.

THE ISLAND OF MOLOKAI AS A HOME FOR LEPERS.

As can be seen from the accompanying small sketch of the island of Molokai (Fig. 3), the leper settlement occupies only a very little of it. It seems to me that in view of the many lepers that will come under our charge it might be advisable to devote the whole island of Molokai to homes for lepers. There is only one limited tract of land owned by Mrs. Myers and her children which is of any considerable money value. The balance of the island could be bought very cheaply. The Hawaiian lepers should remain where they are, but the remaining part of the island could be readily converted into pleasant leper homes. The entire island is large enough for colonies representing different nationalities which could be established sufficiently far apart to guard against international friction. It would not be difficult to locate pleasantly 3,000 additional lepers on the opposite shore and mountainous part of the island. This suggestion is worthy of consideration.

(To be continued.)

Clinical Report.

A CASE OF BRASS MOLDER'S AGUE.

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Patient.—J. G., aged 33 years, Polish, married, brass molder, has been under my personal observation one year. He entered St. Mary's Hospital July 17, 1904.

Family History.—Father and mother died of old age; disease unknown to patient. Two brothers and two sisters alive and healthy; one brother died of some acute abdominal affection.

Personal History.—Measles and scarlet fever as a child; otherwise well until present illness. No venereal history.

Present Illness.—Patient came to this country fourteen years ago and began working at an occupation in which he continually inhaled and was exposed to an atmosphere laden with minute particles of brass filings. One year later his symptoms began. He first noticed palpitation of the heart, accompanied by pain in precordial region; also pain in abdomen of a dull character, sometimes lasting several hours. Numbness and cramps in arms and legs, together with difficulty in moving the extremities were not infrequent phenomena. A prominent symptom was a fine tremor, most marked in muscles of the face, hands and fingers. On several occasions he had distinct chills lasting several minutes. Constipation was very obstinate requiring cathartics constantly. Patient's appetite gradually became impaired. He was troubled with bronchitic symptoms which were severe. From time to time he was confined to bed for periods of one or two weeks. Recently severe headache, attacks of vertigo and dizziness and a burning sensation in the epigastric region has been noticed. His hair has fallen out lately and his memory is failing. As to habits, he is a habitual user of alcoholic beverages, which he thinks aggravate his condition; he does not use tobacco in any form.

Examination.—Medium-sized man, height 5 feet 6½ inches, weight 126 pounds; emaciated; sallow, anemic, unhealthy looking complexion; has lost 25 pounds in the last month. Marked baldness of head; also some loss of both pubic and axillary hair. Tongue coated heavily, foul breath; shows a beautiful green zone or border along the gingival margin of the gums, which can not be removed by ordinary scraping. Teeth in good condition. Pupils react to light and accommodation; eye grounds normal. Skin tinted yellow; dry, scaly. Sensation normal; electrical reaction normal. Patellar reflexes exaggerated, especially on right side, where there is a repeated clonic response to a moderate tap. Ankle clonus present in both. Cremasteric and corneal reflexes normal. Fine tremor in fingers, hands and facial muscles; also wasting of said muscles, speech indistinct and tremulous. No glandular enlargement; osseous system negative. Arteriosclerosis marked. Lungs slightly emphysematous. Heart, liver and spleen normal. Abdomen negative, some epigastric tenderness and a loose tenth cartilage.

Urinalysis.—Negative; Marsh test negative. Examination of feces, chemical and microscopic, negative.

Examination of Blood.—Differential count of 120 fields:

Hemoglobin		80 %
Red cells		4,960,000
White cells		10,800
Small lymphocytes	110	18 %
Large lymphocytes	65	10 %
Eosinophiles	10	.016 %
Polymorphonuclear leucocytes	400	66 %

Treatment.—At the beginning the patient was treated symptomatically; iodid of potassium in a saturated solution was given until physiologic reaction appeared. The literature was scanned, but without giving much information. Milk, given very hot, but not boiled, afforded a good deal of relief. It was given with the idea that it would precipitate both zinc and copper into insoluble albuminates. No marked improvement followed the use of bromids and iodids. During the acute attacks morphia in ½ to ¾ gr. doses was administered hypodermically with only slight cessation of pain. Quinin hydrochlorate and sulphate were given for the chills without effect. The patient was given large doses of zinc phosphid and sulphate of strychnia for the tonic effect. On his entering the hospital it was discovered that anything hot was soothing to him and relieved his pain; hot water was then tried, to which was added gum camphor, 5 grains to a pint of hot water; he would drink at times two to three pints of this with great relief. The local application of a large mustard plaster over the entire abdomen gave relief at times. Total abstinence from all meat was followed by improvement, and he has since been put on a strictly vegetable diet, with no return of symptoms. It is strange that hot water with small doses of camphor gum should give relief. It is worthy of a trial.

New Instrument.

SUTURE SCISSORS AND SUTURE REMOVER IN ONE INSTRUMENT.

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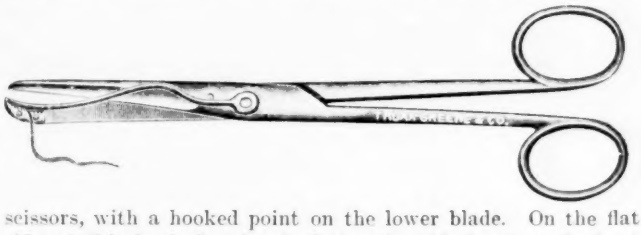
It is customary for a great many surgeons to stitch up lacerations of the cervix with non-absorbable sutures, such as silkworm-gut. Lacerations of the perineum are more frequently sewed up with such material. When such sutures are used it is often difficult to remove them. The reasons for this are obvious: 1. Sutures within the cervix are deeply situated; 2, there is usually not sufficient light; 3, sutures occasionally are buried beneath congested, inflamed or overlapping tissue; 4, there is very little room to work; 5, it is difficult to use two instruments within the vagina, viz., one to hold the end of the sutures, and the scissors to cut the sutures; 6, the view is obstructed so that it is difficult to secure the suture without wounding the portio vaginalis. A few of these difficulties are experienced in removing perineal sutures.

It occurred to me that a combined instrument might be made so that the sutures could be hooked up, cut and withdrawn, all with the same instrument. Such an instrument I have had constructed. It consists of an ordinary 7-in. straight



scissors, with a hooked point on the lower blade. On the flat side of this hooked point is fastened a block of steel about 1/16 of an inch wide, corresponding with the curve of the hook, extending ½ of an inch along the flat surface of the lower blade, and fastened a little below the level of the cutting surface. The hooked point is rounded and dulled so that it will not wound the soft tissues. A spring, extending to the point of the upper blade, is fastened by the screw holding the two blades. It has a surface at its extremity to correspond with the curve and width of the block on the lower blade. Two pins a little in front of the screw, hold the spring, making it firm above and below. The opposing surface of the spring and block are roughened so as to hold the suture firmly. This is more necessary for silk sutures. A suture that is to be removed is caught up with the hook, the scissors closed, and the spring clamps the suture onto the block before the cutting surface of the blades sever the suture. When the suture is cut, traction is made on the scissors; this pulls the suture out of the tissues. Care should be observed to get the knot on the side of the spring. These scissors can be used for removing sutures from any locality, but will be found especially useful in removing sutures located deeply, as within the cervix.

The advantages for such an instrument are that one hand is used, and thereby the view is not obstructed; the sutures can be caught up with the hook, quickly cut and removed.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

SATURDAY, AUGUST 13, 1904.

MEDICAL EDUCATION IN THE UNITED STATES.

The present issue of THE JOURNAL is the fourth annual educational number, and contains statistics regarding medical education in the United States, covering the year ending June 30, 1904. The information contained in this statistical study was obtained largely from the colleges directly, and has been certified to by some one in authority in each school, so that we have every reason to believe that all the data are as correct as can be obtained. It has been no easy task to gather all this information, and any errors that may have crept into the work are only such as are likely to occur when information is gathered from many sources. Only one college in the United States (not including the Manila and San Juan schools) flatly refused to give any information, but the data which might have been obtained would not have changed the totals appreciably. We take this opportunity of extending our thanks to all those who aided us in gathering these statistics.

A perusal of our study will show that medical education, so far as students and colleges are concerned, has not changed materially during the past year, although a slight improvement is noticeable in the advances made in the length of the college term. This improvement is, on the whole, very gratifying, inasmuch as it shows the disposition of all the schools to better medical education In the statistics contained in this number, we have embodied some new features which, we are convinced, will be of interest to medical educators.

Number of Medical Students.—The number of medical students in the United States for the year ending June 30, 1904, was 26.138—a decrease of 1,477 below the year 1903. Of this number, 23,662 were in attendance at the regular schools; 1,105 at the homeopathic; 1,014 at the eclectic, and 357 at the physiomedical and nondescript schools. There was a decrease in the attendance of the regular schools of 1.268 below last year, and a decrease of 1,216 below the year previous—1902. In the homeopathic schools, there was a decrease of 393 below that of 1903, and a decrease of 512 below 1902. The eclectic schools have been increasing steadily since 1900. In 1904, 1,014 students attended the eclectic schools, an increase of 166 over the attendance of the year previous—1903. The physiomedical and nondescript schools show an increase in attendance of 18 over the previous year, the attendance in 1903-04 being 357. This increase, however, occurred in the nondescript schools and not in the physiomedical.

TABLE OF MEDICAL COLLEGE ATTENDANCE.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880.....	9,776	1,220	830	...	11,826
1890.....	13,521	1,164	719	...	15,404
1900.....	22,710	1,909	552	..	25,171
1901.....	23,846	1,683	664	224	26,417
1902.....	24,878	1,617	765	241	27,501
1903.....	24,930	1,498	848	339	27,615
1904.....	23,662	1,105	1,014	357	26,138

Number of Graduates.—The total number of graduates for the year ending June 30, 1904, was 5,747, an increase of 49 over the preceding year. The increase in 1903 over 1902 was 699, so that the increase during the present year was much less than that of the year previous. Of course, there are 9 more colleges this year than there were last year, but 3 of the 9 were not in session, and the others, with the exception of 1, taught only a portion of the medical course. Although the graduates have increased slightly, the matriculants have decreased considerably, and we must assume that the decrease has occurred largely in the freshmen classes, partly because of the increase in entrance requirements, partly because of the increase in fees and general expense of the medical course, and, perhaps because of the prosperity in the business world in general, which usually lowers the attendance in the professional schools. In some colleges there was a decided falling off in the freshmen class, while in others there was a very slight increase. The falling off was noticeable, particularly, in those schools that raised their entrance requirements. The decrease in the number of graduates in the homeopathic schools—49—represents the lowest number of graduates since 1902. The eclectic schools show a decrease of 3 in the number of graduates below last year, and the other school a decrease of 1. In the regular schools, on the other hand, there has been an increase of 102 over 1903.

TABLE OF MEDICAL COLLEGE GRADUATES.

Year.	Regular.	Homeopathic.	Eclectic.	Physio Med. and Nondescript.	Total.
1880.....	2.673	380	188	..	3.241
1890.....	3.853	380	221	..	4.454
1900.....	4.715	413	86	..	5.214
1901.....	4.879	387	148	30	5.444
1902.....	4.498	336	138	27	4.999
1903.....	5.088	420	149	41	5.698
1904.....	5,190	371	146	40	5,747

Number of Colleges.—Our report last year showed that there were at that time 157 medical colleges, 3 of which did not grant the degree of M.D., but taught only the first two years of the medical curriculum. Since then 1 college has passed out of existence, and 10 new ones have been formed, making a total of 166 colleges at the present time. Of these 133 are regular, 19 homeopathic, 10 eclectic, 3 physiomedical, and 1 institution which teaches all the "pathies" and "isms," including osteopathy. Of the regular colleges, 2 are not yet active and 7 do not grant any degree. Of the latter number, 6 teach only the first two years of the medical course, and 1 only the first year. Two of the regular colleges are located in our island possessions; one is the Med-

ical Department of the University of Porto Rico at San Juan, and the other the Medical Department of the San Tomaso University of Manila, P. I.

COLLEGES IN STATES AND CITIES.

ALABAMA—2.	
Birmingham	1
Mobile	1
ARKANSAS—1.	
Little Rock	1
CALIFORNIA—8.	
San Francisco	5
Oakland	1
Los Angeles	2
COLORADO—3.	
Denver	2
Boulder	1
CONNECTICUT—1.	
New Haven	1
DISTRICT OF COLUMBIA—3.	
Washington	3
GEORGIA—3.	
Augusta	1
Atlanta	2
ILLINOIS—16.	
Chicago	15
Galesburg	1
INDIANA—6.	
Indianapolis	4
Fort Wayne	1
Bloomington	1
IOWA—5.	
Iowa City	2
Des Moines	1
Sioux City	1
Keokuk	1
KANSAS—3.	
Lawrence	1
Topeka	1
Kansas City	1
KENTUCKY—7.	
Louisville	7
LOUISIANA—2.	
New Orleans	2
MAINE—1.	
Portland	1
MARYLAND—8.	
Baltimore	8
MASSACHUSETTS—4.	
Boston	4
MICHIGAN—6.	
Ann Arbor	2
Detroit	3
Grand Rapids	1
MINNESOTA—3.	
Minneapolis	3
MISSISSIPPI—1.	
Oxford	1
MISSOURI—15.	
St. Louis	6
Kansas City	6
Columbia	1
St. Joseph	2
NEBRASKA—3.	
Omaha	2
Lincoln	1
NEW HAMPSHIRE—1.	
Hanover	1
NEW YORK—11.	
New York City	8
Albany	1
Buffalo	1
Syracuse	1
NORTH CAROLINA—4.	
Raleigh	2
Davidson	1
Wake Forest	1
OHIO—10.	
Cincinnati	4
Cleveland	3
Columbus	2
Toledo	1
OKLAHOMA—1.	
Norman	1
OREGON—2.	
Salem	1
Portland	1
PENNSYLVANIA—7.	
Philadelphia	6
Pittsburg	1
PHILIPPINE ISLANDS—1.	
Manila	1
PORTO RICO—1.	
San Juan	1
SOUTH CAROLINA—1.	
Charleston	1
TENNESSEE—11.	
Nashville	4
Knoxville	2
Chattanooga	2
Memphis	1
Jackson	1
Sewanee	1
TEXAS—8.	
Galveston	1
Fort Worth	1
Dallas	5
Texarkana	1
VERMONT—1.	
Burlington	1
VIRGINIA—3.	
Charlottesville	1
Richmond	2
WEST VIRGINIA—1.	
Morgantown	1
WISCONSIN—2.	
Milwaukee	2

Three colleges are exclusively for women; 60 for men; 103 are co-educational; 4 hold only night sessions, and 2 both day and night sessions. There are 7 schools to which only colored people are admitted. Four schools operate under the continuous course system, the year being divided into quarters, the student being allowed to attend only a specified number of quarters or semesters in each calendar year. Sixty-six regular schools, 4 homeopathic and 1 eclectic college have a university connection or affiliation. The baccalaureate and medical degrees are granted at the end of six years' study by 6 colleges, and at the end of seven years by 1 college.

Seventy regular colleges are members of the Association of American Medical Colleges, 12 belong to the Southern Medical College Association. 18 of the homeopathic schools are recognized as in good standing by the American Institute of Homeopathy, and 8 of the eclectic colleges are members of the National Confederation of Eclectic Medical Colleges. Many of the colleges not in these associations abide by their entrance requirements.

A study of the following comparative table of medical colleges is of interest. The regular schools have increased in number since 1903, while the other medical colleges number as many as last year. It must be remembered, however, that last year only 3 schools gave instruction in the first two years' work of the medical curriculum, whereas this year 7 schools were engaged in doing this preparatory work. Each of these preparatory schools are integral parts of recognized universities, and this work, therefore, is accepted as a full credit by other medical colleges. By subtracting these 7 colleges, and also the 2 schools in Porto Rico and Manila, from the number of regular medical schools, it gives us an actual increase of only 2 colleges which grant the degree of M.D., or a total of 156.

COMPARATIVE TABLE OF MEDICAL COLLEGES.

Year.	Regular.	Homeopathic.	Eclectic.	Physio Med. and Nondescript.	Total.
1880	72	12	6	..	90
1890	93	14	9	..	116
1900	121	22	8	..	151
1901	124	21	10	4	159
1902	121	20	10	4	155
1903	121	19	10	4	154
1904	133	19	10	4	166

Length of Terms.—A study of the length of terms in months, of the various medical colleges, discloses some very interesting facts. Of the 163 schools from which we were able to obtain the necessary information, 40.3 per cent. have a course of at least eight months' duration. Only 16.3 per cent. have a course of less than seven months' duration. The figures are as follows:

TABLE OF COLLEGE TERMS.

Term.	Schools.	Per cent.
6 months	27	16.3
7 months	44	27.0
7½ months	22	13.5
8 months	34	20.8
8½ months	13	7.9
9 months	19	11.6
*10 months	4	2.4

*Night schools.

Nearly all the shorter term schools are located in the South, where medical educators feel that the conditions are such as to prohibit a longer term. Most of the nonsectarian schools have seven months' terms. A very small percentage of the regular colleges have less than a seven months' term. Many of the colleges which last year had seven months' terms have adopted the eight and nine months' terms for the coming year. It is probable that another year will see the passing of the six months' school. Of course, the term "months" is elastic, inasmuch as seven months means anywhere from twenty-six to twenty-eight weeks; eight months, thirty to thirty-two weeks, and nine months, thirty-three to thirty-six weeks. It would be far better to regulate the length of each annual course by specifying a defi-

nite number of teaching days or number of hours spent in college.

Women in Medicine.—It is of interest that in spite of the apparent passing away of colleges for women, the number of women medical students and graduates has been increasing steadily. During the past year only 2 of the 3 colleges for women were in session, but 97 colleges are co-educational, which may account for the increase in women students. During the past year 1,129 women were engaged in the study of medicine—4.3 per cent. of the total number of medical students, and 244 graduated—4 per cent. of the total number of graduates. Of the total number of matriculants, only 183 were in attendance at the 2 woman's colleges, and 46 graduated from them.

THE COUNCIL ON MEDICAL EDUCATION.

With the appointment of the Council on Medical Education[1] at the Atlantic City session, the American Medical Association again voices its interest in the subject of medical education, and commits itself to an active participation in the efforts which are being made to elevate the standards of medical education in this country. It is interesting that this step should have been taken at a meeting held within a few days of the death of the founder of the Association, whose dominant idea in proposing the organization of the profession, over fifty years ago, was the improvement of medical education. The Council is to consist of five members, appointed by the President of the Association, and its functions are defined as follows:

First, "to make an annual report to the House of Delegates on existing conditions of medical education in the United States."

Second, "to make suggestions as to means and methods by which the American Medical Association may best influence, favorably, medical education."

Third, "to act as the agent of the American Medical Association, under instructions from the House of Delegates, in its efforts to elevate medical education."

The plan to be pursued by the Council was left indefinite, and it will doubtless be its first business to determine what lines of work it will undertake and what its relations shall be to the several other organizations having a similar purpose. Notwithstanding the gratifying advance which has been made in medical education in this country in recent years, as was well stated by the resolutions creating the Council, "the existing standards of medical education are not satisfactory as compared with those of other great powers." The conditions are ripe for a vigorous, concerted movement by all who are interested in the elevation of the medical profession in the United States. In this movement the Association, with its enormous and increasing membership and its thorough organization, may be a factor of great importance. It must proceed, however, with due regard to existing conditions, and will do best to co-ordinate its activities with those of existing organizations seeking the same end. Some conditions peculiar to this country are mentioned in the resolutions to which we have referred, which state that "our form of government makes it impossible, or at least improbable, to obtain governmental control of medical education." The numerous medical colleges which have to do with the education of the student and the several examining and licensing bodies which guard the portals of the profession, are creatures of the several states, and beyond the reach of national control. We can not have in this country, therefore, a body like the British Medical Council, which has direct official control of the several medical schools and of their students. In its relations to the American Medical Association, and so to the general profession, the new Council is analogous to the Committee on Education of the British Medical Association, appointed in 1898.

Another matter of importance is the existence of several national associations exclusively devoted to one or another phase of medical education, among them the Association of American Medical Colleges, the Southern Medical College Association, the National Confederation of Examining and Licensing Bodies, and the American Confederation of Reciprocating Examining and Licensing Medical Boards. While the efforts of these associations have not always been as vigorous and effective as might have been desired, nevertheless each of them has special purposes in view, and is especially well adapted to the accomplishment of these purposes. At the same time, they have some lines of effort in common, and much of the ineffectiveness of their previous activities has been due to the unnecessary and wasteful duplication of effort and the lack of co-ordination and co-operation. The idea we have in mind may be illustrated by reference to some of the special acts by which the standards of medical education must be elevated.

There is a general agreement that the preliminary education for admission to our medical schools falls far short of that which the conditions of the time require. What should these standards be? Should the fitness of each student be determined by examination (and if so, by whom), or by the presentation of credits from certain recognized preparatory schools? If credits are to be accepted, who shall determine what institutions of general learning are to be recognized for this purpose?

The curricula of our numerous medical schools differ very greatly in the relative amount of time assigned to the several medical branches, and also as to the methods by which they are taught. The degree of this absurd and illogical diversity has been well set forth by Dr. George W. Webster's recent paper, to which we refer elsewhere. Something must be done to secure some degree of uniformity.

The numerous and rapid changes which have been made in the curricula of our medical schools in recent years have resulted in a sad lack of mutual understand-

1. See Frontispiece.

ing on the part of the medical schools, and it is becoming very difficult, in many cases, for the officials of an institution to pass intelligently on the credits of a student from another school seeking admission to advanced standing. This same lack of understanding and knowledge, together with an utter absence of any uniform system in the issuing of credits, has made it possible for dishonest students to impose on the officials of a school by the presentation of altered or forged credentials, a very serious abuse greatly in need of correction.

All of these matters belong properly to an organization of those engaged in the actual work of medical education, such as the Association of American Medical Colleges, though it might easily happen that the efforts of this association to advance along these lines would be more vigorous and successful with the prompting and co-operation of a body like the Council on Medical Education.

One of the most obvious needs of the time is some plan by which the numerous medical colleges may be compelled to live up to the standards which they set forth in their announcements. It is difficult to see how this end can be attained without a system of efficient and rigid inspection by an authorized and authoritative official. It would seem that such inspection could best be accomplished by an appointee of the Confederation of Examining and Licensing Boards. First, because the members of this confederation have actual need of the exact information which would be gathered by such an inspector; and secondly, because the examination by such an official, whose unfavorable report of an institution might result in the refusal to recognize its diplomas by most of the state examining boards, would be almost compulsory in its effect. Two other items naturally come within the province of this confederation. Now that a license to practice can be obtained in most of the states only by passing an examination conducted by the state board, the character of these examinations and the method of their conduct has come to be a matter of great importance, and it may be safely asserted that the present conditions are far from satisfactory. It is only necessary to allude here to the enormous importance of reciprocity in licensure between the several states.

Another important matter which might properly come within the province of the Council on Medical Education, is the suggestion of some plan by which the large and increasing amount of clinical material in the many hospitals springing into existence in the smaller cities can be utilized for the purposes of practical medical education. There is enough material of this sort to almost provide an interneship of one year for every medical graduate. It is only necessary, for the accomplishment of this desirable end, that the several medical faculties should be brought in touch with those in control of these hospitals that they may co-operate with each other. There are many other avenues of effort through which the standards of medical education can be elevated, but along most of these one or more existing organizations are already directing their efforts. What is especially needed at the present time is some means by which these various organizations may be made to co-operate effectively. Such an end could be best secured by a joint conference of authorized representatives of these organizations held under the auspices of the new Council on Medical Education. The Association might, of course, endeavor to enforce certain standards of preliminary and professional training by exacting compliance with such standards as a prerequisite for membership in the Association and its constituent societies. With the rapidly changing standards of the last few years, it would be difficult to formulate a list which would be at the same time just and effective. It is questionable, too, whether such an effort would not seriously interfere with that supreme purpose of the Association at the present time, to gather within its membership every reputable and right-minded physician. For the present, at least, we believe that the Association through the new Council will perform the largest service to medical education by the exercise of its moral force and by utilizing through co-operation the forces of the existing organizations to which we have referred.

THE EDUCATION OF THE INTERNE.

It is generally conceded by the medical world that the education of the young physician is not completed when he leaves the medical school. Just what proportion of students in the United States take a year or more of hospital work after graduation is impossible to say. The Mosely Commission stated that, according to its information, 50 per cent. of all students took such a course. In our opinion this percentage is too high, but whatever the actual numbers, it is certain that most of us consider such hospital experience indispensable, and that ambitious students strive for it. The reason that the number of graduate students entering the hospitals is not larger is lack of opportunity—not lack of applicants. From one to two years of what might be called practical apprenticeship is the privilege sought by the earnest student. To gain this privilege he often undergoes special training for a competitive examination; he delays for the period of his interneship his start in the world and his establishment in his profession.

The courses in the medical schools are subject to constant revision and improvement, and we are gradually rejecting the old method of didactic lectures to crowds of students and are substituting careful personal instruction to small groups. Indeed, the last decade has seen an almost revolutionary change in the methods of the schools. The interneship is the coping stone of the structure, and it is worth while to ask whether the methods of the hospital have kept pace with those of the school.

In old times the student entered the medical school and went to lectures as he pleased. He was there to pick up knowledge as best he could. The professor had no personal responsibility toward him. It may be asked fairly whether this haphazard system does not still survive in many of our largest hospitals. Does the hospital service, for which the interne sacrifices so much, count for all it should in equipping him for his profession?

Let us recall what occurs when the young graduate at last gains entrance as interne to the wards of one of our largest hospitals. In the first place, he finds himself overwhelmed by the number of patients committed to his care. To get through the routine work of the day usually taxes his powers to the utmost, and leaves him neither time nor energy for detailed work on the unusual and instructive cases. Thus he is in great danger of forming at the outset the habit of handling his cases superficially—a habit which ruins him as a diagnostician. Yet it is here in the hospital that he should acquire, under careful guidance, the methods to be followed throughout his professional life. Many of us can recall with shame and amusement the helter-skelter "rounds," the hasty taking of histories, the farce of physical examination in cases which did not commend themselves to our youthful intelligence as interesting or unusual. We have since found out, to our sorrow, that it is these same unimportant cases which are most likely to prove stumbling-blocks to the superficial diagnostician.

In contrast to the hasty methods of such hospitals there is much to be said for the leisurely learning which some of us enjoyed as we accompanied an honored Nestor on his daily rounds in a large family practice. The number of cases seen was insignificant compared with those handled by the interne, but the sum of accurate observations at the end of a day was probably much greater. Dr. Toulouse, superintendent of one of the French public hospitals for the insane, speaks as follows of the interne service of such hospitals in words which apply only too well to the hospitals we are discussing:

> Those internes who really wish to learn are deterred by the obstacles which they encounter at the outset. The services are overcrowded; the daily round is so hurried that the inexperienced newcomer is overwhelmed by a crowd of details. Before this accumulation of subjects which call for careful study the interne gives up the struggle for a scientific system of work. "There are too many," he says, in despair, and it can not be too often repeated that there are, indeed, far too many.

It would be unfortunate enough if this were the only result of allowing the interne to be thus overwhelmed by his material, but there is still another consequence which is even more detrimental to the scientific attitude of mind: We mean the undue self-confidence which the interne is likely to exhibit when he rises above his first sense of helplessness. It is fair to say, however, that this overconfidence, this eagerness for independent experiment, is not the fault of the interne alone. In the last analysis the failure of the hospital to give the proper training to its internes lies at the door of its attending men. In the first place, the staff of some great public hospitals is encumbered with men who are incapable of teaching internes, and who have obtained their positions through political influence in order to gain prestige. There are other men, able practitioners, but occupied by their private practice, who are content to allow their names to adorn the roster of the staff without personally appearing in the wards. This leaves the legitimate work of the attending men to be performed by a totally inadequate number of physicians and necessarily frees the interne from proper supervision.

We know that there are those who will take issue with us on this point. We know the arguments usually urged: that this absence of supervision gives a man self-reliance and ingenuity; that many of our most brilliant surgeons are the product of such training, or rather of such lack of training, but we are firm in our belief that careful supervision and instruction are invaluable, and that the brilliant surgeon and diagnostician has emerged in spite of no training rather than because of it.

Why should we expect to reverse all educational laws at the entrance of the hospital? When the graduate in electrical or mechanical engineering leaves the technical school, it is insisted by the great railways and factories into whose employ he enters that he go through a progressive apprenticeship under skilled foremen. He is not allowed to experiment with costly machinery on his text-book knowledge, much less with human life. Would it not be better, for instance, that an interne should be taught to perform version under a skilled obstetrician, rather than that he should arrive at the proper method after a series of more or less disastrous independent experiments? Why do our students go to the German hospitals. It is not so much because of insufficiency of material at home; it is rather that they are certain of receiving in the wards the personal instruction of the best men in Germany.

Of course, what we have said does not apply to all American hospitals. There are those whose service is not surpassed by any in the world. On the other hand there is a true story of an interne who was seen in one of our large hospitals, and who, when asked how he was getting on, blithely replied: "O splendidly; I like it so much better than ——— (mentioning an admirable instance of a carefully conducted hospital). About all you can do there is to follow the doctors around and watch what they do, but here the attending men are just figure-heads and never interfere with us."

What certain great free hospitals in this country need is a reorganization of the medical service which shall secure an adequate number of internes, and attending men who shall not be "figure-heads."

PRACTICAL EXAMINATIONS FOR LICENSURE.

More than a quarter of a century has elapsed since the enactment in Illinois of the first effective medical-practice act in the United States. The movement for the effective control of the admission to the practice of medicine, thus inaugurated, gaining momentum with the passing years, has advanced with especial rapidity in the last decade, until, at the present time, there are few states or territories in which the right to practice can be secured except the applicant submit himself to some sort of a test of his ability. The most significant feature of this recent progress is the requirement of an examination conducted by the licensing board, in addition to the presentation of a diploma from a recognized medical school. The licensing body is thus entirely divorced from the teaching body, and as these examinations are the sole avenue of entrance to medical practice, their character and conduct become a matter of supreme importance.

Are these examinations, as now conducted, of such character as properly and adequately to test the fitness of the applicant to practice his profession. Are they in line with the modern methods of medical education? During this quarter of a century the modes of instruction in our numerous medical schools have undergone a radical change. The didactic lecture, and the lecture illustrated by the presentation of a patient in the arena or the performance of an operation (an exercise usually misnamed a clinic), have been supplemented, and to a notable extent, supplanted by laboratory and other practical methods. It has come to be universally recognized that no person can become proficient in the study of disease and the treatment of the sick, at second hand—*solely* by the reading of books, listening to lectures, or the recitation of lessons committed to memory, however useful these means of instruction may be in connection with those of a more practical character. Such proficiency can only be obtained by the study at first hand of the things themselves; by the training of the powers of observation, and of manual dexterity by their actual exercise.

A board of medical examiners is a body appointed by the state to protect its people against incompetent persons laying claim to the special knowledge and training which are requisite for the intelligent practice of medicine. *A priori* its function is, therefore, to demand evidence of such ability by such tests as will adequately demonstrate it. Such evidence a purely written examination can never afford. Such written tests, moreover, as are now universally in vogue, are an anachronism as a means of the examination of students who have been trained in the laboratory, the dissecting room, the practical courses in operative surgery, and in the actual contact with patients in the dispensary and ward clinic. They put a premium on the obsolete methods of memorizing of text-books—of "cramming," in a word, which are the *bête noire* of all modern educators.

Radical changes need to be made in these examinations in the immediate future. While written papers, as the most ready and convenient means of testing the applicant's knowledge, should continue to be required, they ought to be supplemented by as many practical tests as possible. Almost all of the medical branches lend themselves very readily to such practical examinations, which may be held without unreasonable expenditure of time, and with materials which can be obtained without serious difficulty. In gross anatomy the applicants may be required to identify and describe cross-sections and dissected parts and to indicate, on the living subject, the important landmarks and the outlines of underlying structures; in histology, neurology and embryology, to identify and describe mounted specimens under the microscope; in bacteriology, to identify micro-organisms in culture and in cover-slip preparations; in pathology, to identify and make diagnoses from gross and microscopic specimens. In the clinical branches such methods are also available. The examination in medicine should include identification and significance of mounted cover-slips of blood, urinary sediments, sputum, feces, and other body products; he should demonstrate his facility in the methods of physical exploration on the living subject, for which purpose healthy individuals would suffice quite as well as those who are sick. In surgery, operations on the cadaver, the application of bandages and other surgical dressings, and the preparation of himself, and a cadaver, serving as a patient, for an aseptic operation, might easily be required. In obstetrics, the manikin, with suitably preserved specimens of the fetus and the female pelvis, furnish means of testing his knowledge of obstetric procedures and his facility in their performance.

The materials necessary for such examinations would gladly be furnished to the examining boards by the medical schools, laboratories and hospitals, at a minimum cost and in many cases without cost. To the statement sometimes made that such examinations are not feasible, it is sufficient to reply that they have been in vogue in Great Britain and the nations of Europe for many years.

MEDICAL STANDARDS AND THE PUBLIC SERVICES.

The question of a standard of medical education which, in other nations, is simplified by the intervention of the national authority, either directly or indirectly, is in the United States rendered difficult of solution by the absence of such central authority. Yet it is a fact that the National Government is interested in this matter, in that it has in the permanent personnel of at least four of the great executive departments a large number of physicians. In three of them—the Department of War, the Navy and the Treasury which latter embraces the Public Health and Marine-Hospital Service—a high, and as near as practicable a fixed standard has been made a prerequisite to admission to the permanent medical service.

In any serious movement looking to a national standard, the public medical services should be taken into consideration and their uplifting influence made of use and correlated to the requirements of such a standard. Examinations for admission to the Medical Department of the Army became habitual in 1832, and a knowledge of Latin and of physics was first required in 1849. In the Navy the first medical examining board was organized in 1825. A literary degree is not demanded of candidates, although evidences of marked lack of general education constitute a cause for rejection. Although in the three public services the examinations are conducted by boards which have no connection with each other and under regulations which differ as to minor details, yet the qualifications required of candidates are approximately the same in each. As the candidates for admission to the public services are drawn from all the schools and all parts of the Union, they are presumably neither better nor worse than those who come before the state boards of examiners for license to practice. The subjects covered by the examinations are also practically identical. Therefore a fairly accurate comparison between the average standard of the state boards and that of the public services may be made by finding the percentage of rejections in each. In twenty states, being all from which the figures could be obtained, it was found that during the last five years 75 per cent of the candidates examined have been successful and 25 per cent. rejected. A summary[1] of the results of the examinations of 5,027 candidates for license to practice held by the boards of thirty-seven states during the year 1903, showed that 14 per cent. were rejected. In the examination for the three public services, not including those rejected for physical defects, out of a total of 1,035 examined, 347, or 33.5 per cent., have been successful, and 688, or 66.5 per cent., have been rejected.

We find here a standard respectable alike because of the number of competitors, the importance of the positions competed for, the broad sphere of its operation, embracing all the states, and because it is applicable to all schools of good standing. While evidently too high for adoption by state boards, it is valuable as a comparative standard for them, and should be considered in devising plans of interstate reciprocity. It is also worthy the attention of teaching bodies, especially as it has been found necessary for each of these services to maintain at the National Capital a post-graduate school of high grade for special instruction in subjects which are peculiar to their needs, or which are insufficiently taught in even the best medical schools. The subject of hygiene, including etiology and preventive medicine, which, as shown by Dr. Webster's tables,[2] receives an average of only forty-six hours in the entire course of 124 medical schools, is the only subject taught in one of these service schools, and may fairly be considered the *raison d'être* of all of them. Whether in the crowded condition of the medical curriculum and the ever-widening sphere of medical science, it will be possible to give the general practitioner a more satisfactory knowledge of preventive medicine is doubtful. If not, the time has come to recognize preventive medicine as a well-marked specialty, and one of supreme importance to communities, states and the two branches of the military service.

1. The details of this summary are on pages 514 to 517 of this issue. Incidentally it is interesting to compare the percentage of rejections in the past five years (25 per cent.) with those in 1903 (14 per cent.). Did the raising of the standards of the state boards cause more failures a few years ago, and have the colleges since reacted to the stimulus and given their students better preparation so as to thus reduce the percentage of failures?

THE TABLE OF STATISTICS OF COLLEGES.

On pages 504 and 505 will be found a table giving the states containing medical colleges; the name of each college; the population of the city in which the college is located; the number of men and women registered as students during the session of 1903-04, and also the graduates (men and women) of 1904; the total number of teachers, and the number of weeks in the college year. The suffixes, R., H., E., P. M., stand for regular, homeopathic, eclectic and physiomedical. Much of the information to be derived from this table has been set forth in the editorial on medical education in the United States, page 466.

DISTRIBUTION OF MEDICAL STUDENTS.

The table showing the "Distribution of Medical Graduates," on pages 514 to 517, has its accompaniment in the table on pages 506 to 509, showing the states from which the medical students of each college come. New York, Pennsylvania and Illinois furnish the majority of the medical students in this country. Next come Indiana, Tennessee, Texas, California and Massachusetts. Some of the states, such as Arizona, Delaware, Idaho and Florida, furnish a very small quota. Densely populated cities and states, in which the people follow mercantile pursuits, furnish the majority of physicians, whereas the mining and cattle states furnish comparatively few. The local conditions and the occupation of inhabitants of cities and states certainly influence the inclinations and propensities of men and women to study medicine. Of the 26,138 medical students registered during the session of 1903-04, only 361 are not included in this table, so that it is sufficiently accurate to permit of making deductions. These 361 students were registered in six or eight colleges, most of which are small, and can be disregarded in summing up. Two of these schools are of some size, and as the majority of their students come from Kentucky and Indiana, the totals of these two states would be increased considerably.

THE UNIFORM MEDICAL CURRICULUM.

The report[2] on the curricula of American medical colleges made by Dr. George W. Webster, Chicago, to the National Confederation of State Medical Examin-

2. Report on the Curricula of American Medical Colleges. George W. Webster. N. Y. Med. Journal, July 23 and 30, 1904.

ing and Licensing Boards, at its meeting in Atlantic City, discloses some very interesting information with reference to the inequality in the number of hours devoted to the teaching of the various subjects of the medical curriculum. To some studies of but little significance and importance, a great deal of time is devoted, while to others of prime importance to the physician, too little time is given. Apparently, in some schools, the professor of hygiene or of anatomy, or of chemistry, is a very strong man, and the entire faculty has been built up around him; in fact, it is a one-man school. Again, it is possible that an additional number of hours are devoted to work in the chemical or other laboratory in order to occupy the student's time. Certain it is that a disproportion exists in the number of hours devoted to the various subjects. Dr. Webster has obtained his information directly from the colleges, yet it is evident that in some cases a discrepancy has crept in because, for example, it is beyond the possibilities of human endurance to put in sixteen hours a day in the college, even if this included the time to be devoted to study. Dr. Webster has compiled a table showing the average number of hours devoted to each subject in the curricula by 125 medical schools. Although these figures can not, perhaps, be accepted as forming an ideal standard, yet they serve the purpose of permitting of the construction of a standard curriculum which is to be adopted as a minimum for the degree of M.D., as follows: The course shall consist of four terms, in four separate calendar years, each term to consist of thirty weeks of work, exclusive of holidays, and of at least five hours of college work each day, and thirty hours in each week, or nine hundred hours per year of actual work. The entire course of four years shall consist of not less than thirty-six hundred hours of required work. Any elective work should be in addition to the above. Clinical work should constitute at least one-fourth of the total number of hours in the four-year course. The adoption of a standard uniform curriculum, says Dr. Webster, will be in the interest of higher medical education. It will give to each subject that relative importance which rightly belongs to it. It will enable students to receive due credit for work done in any recognized school which adopts and conforms to this standard. It will serve as a basis for reform in state board examinations, and will make possible the interchange of licensure—reciprocity. The medical degree will have a reasonably uniform standard of value, and will mean something to its holder.

DISTRIBUTION OF MEDICAL GRADUATES.

We have tabulated—on pages 514 to 517 of this issue of THE JOURNAL—the reports of the state examining boards for the calendar year 1903. We consider this table well worth the careful inspection of all who are interested in the advancement of medical instruction. It is so arranged that by reading from left to right the individual medical colleges of the United States and Canada which grant degrees may be studied or comparisons readily made. It shows where the graduates of each college are locating, the number who passed (P) and failed (F) in each state, the total appearing in all states from which we have received reports, together with the totals of those who passed and failed, as well as the percentage of failures. Graduates of foreign colleges (this does not include Canada) locating in the United States are likewise shown. Reading from above downward, the figures are given by states, thus allowing an easy comparison as to the number locating in each, the colleges represented, and the totals of those who were passed and rejected and the percentage rejected. It will be seen that 5,027 applicants were examined in thirty-seven states, of whom 14.2 per cent. failed. Some state boards are more severe than others. It is also interesting to note that some state boards appear to be lenient toward their own colleges, the graduates of these failing in more instances before the examining boards of other states. The colleges of the few states from which we were unable to get full reports would undoubtedly have a better showing in our table had such reports been received, possibly from the leniency hinted at above, but more certainly from the fact that a very large percentage of medical college graduates come from and locate in the state which is the home of the college. All the states are not represented in the table. Several still do not require examinations. Of those requiring examinations, the large majority promptly sent us reports. Others failed to respond even after repeated requests. Some pleaded lack of clerical help, but some of these failed to respond even after THE JOURNAL had offered to pay the expense of copying the records. But the most astonishing reply received to our request was the refusal of the examining board of one state to send the itemized report of failures asked for, since they feared that the reports, if published, might put some medical colleges in a bad light! THE JOURNAL wishes to express its thanks for the hearty co-operation that, as a rule, has been received from the various boards. The requirement of examinations in some states is but comparatively recent, and methods of record keeping are still in the evolutionary stage, and will doubtless improve. The Virginia State Board published in detail the grades in each separate subject in which each applicant was examined. This is of great value to the colleges concerned, since they can see in what subjects their graduates are weak, and take steps to strengthen the instruction in the department concerned.

Miscellany.

New Colleges, and Colleges Discontinued.—During the year the following colleges were incorporated: College of Physicians and Surgeons, Los Angeles, Cal., to begin work Oct. 1, 1904. Bell Medical College, Dallas, Tex.; the first session began Oct. 1, 1903; the first and second years of the medical course are being given by the University of Indiana, Bloomington; Fordham College, New York; Lombard College, Galesburg, Ill.; West Virginia University, Morgantown, W. Va., and the University of Mississippi, Oxford. The University of the State of Washington is considering the formation of a medical department. The National University Medical Department of Washington, D. C., has been discontinued. Last year we announced the institution of a medical department by the Southwestern Presbyterian University, Nashville, Tenn., but we have been informed that work in this department has not yet begun, and probably never will be.

Affiliation of Toledo Medical College.—The Toledo Medical College is contemplating an affiliation with the University of Toledo.

Medical Department University of Missouri Lengthens Its Course.—This school is now working under a full four-year graded course, which has been recognized by the Association of American Medical Colleges as being up to the standard.

Canadian Students in United States.—In the table indicating homes of students, page 506, those marked "foreign" include Canadians. This will explain the number in the foreign column in certain colleges located near the border.

States That Have No Medical School.—The following states and territories contain no medical college: Arizona, Delaware, Florida, Hawaii, Idaho, Indian Territory, Montana, Nevada, New Jersey, New Mexico, North Dakota, Rhode Island, South Dakota, Utah and Wyoming.

Affiliation Contemplated by the Sioux City College of Medicine.—Plans are being discussed considering an affiliation of this school with Morningside College. Each school is to retain its identity, but the courses are to be combined in such a way that a student can complete his literary and medical work in six years, as is being done by other medical schools having a university connection.

Index to Articles on Medical Education.—The following partial list of articles bearing on the subject of medical education during the past year is given here for the convenience of those who may wish to look up the subject further. It does not lay claim to completeness.

Medical College, Responsibilities of, Carl S. N. Hallberg, Med. Standard, N. Y., August, 1903.
Colleges and Their Clinics, John Hunter, Canada Lancet, January, 1904.
Curriculum, E. A. Schafer, Brit. Med. Jour., Oct. 10, 1903.
Education and Preliminary Requirements, Geo. H. Simmons, THE JOURNAL A. M. A., May 7.
Education in London, London Letter, THE JOURNAL A. M. A. April 2.
Education in the U. S., Frank S. Billings, Med. Herald, St. Joseph, Mo., July, 1903.
Education, Relation of Academic to, W. H. Wathen, Am. Prac. and News, Louisville, Aug. 1, 1903.
Education, Some Aspects of, John H. Musser, THE JOURNAL A. M. A., June 11, 1904.
Graduate, What Is to Become of the, John L. Irwin, Jour. Mich. State Med. Soc., April, 1904.
Instruction: a Plea for Greater Uniformity, N. R. Coleman, N. Y. Med. Jour., Aug. 1, 1903.
Instruction in the United States, Semaine Medical, Paris (No. 44).
School, Chemistry of the, J. H. Long, THE JOURNAL A. M. A., April 9.
Schools, Requirements for Admission to, N. S. Davis, Jr., THE JOURNAL A. M. A., Aug. 15, 1903.
Studies in Europe, John Sutherland, St. Paul Med. Jour., October, 1903.
Teaching, New Era in, George E. Nitzsche, Dominion Med. Monthly, May, 1904.
Medicine, History of, Joseph F. Payne, Brit. Med. Jour., June 27, 1903.
History of, in Russia, M. Lachtin, Wiener klin. Rundschau (xvii, Nos. 47, 49).
Observations on the Teaching of Clinical, W. S. Thayer, THE JOURNAL A. M. A., July 4, 1903.
Conflicting Claims of General Education and Professional Education, Arthur T. Hadley, THE JOURNAL A. M. A., February 6.
Educational Situation in Ireland, Dublin Letter, THE JOURNAL A. M. A., February 20.
Laboratory Method of Instruction, Editorial, THE JOURNAL, May 14.

Medical News.

CALIFORNIA.

College and Hospital Under Way.—The excavation for the new $175,000 Angelus Hospital and for the building for the College of Physicians and Surgeons of Los Angeles was commenced July 14. The college building is to be ready October 6.

Students' Hospital Will Be Enlarged.—The joint committee on health from the student body and the faculty of the University of California, has decided to build an addition to the present building, which will increase the capacity of the hospital to 40 patients and will also provide the necessary accommodations for nurses, store rooms, service rooms and the like.

Examiners Lose Case.—On July 22 Judge Fritz dismissed the charge of practicing medicine without a license, which the State Board of Medical Examiners had preferred against Dr. E. Schmoll, San Francisco, holding that while the accused might have violated the law technically he had not done so deliberately.

Faculty Dines.—In order to get the workers in the new College of Physicians and Surgeons, Los Angeles, into closer touch, a banquet was held, July 16, at which 25 members of the faculty were present, and remarks were made by the president, Dr. Charles B. Nichols; the dean, Dr. Benjamin F. Church; the secretary, Dr. J. H. Schults, and the treasurer, Dr. James H. Seymour.

COLORADO.

Eye, Ear and Throat Men.—The ninth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology will be held in Denver, August 24 to 26, under the presidency of Dr. Edward Jackson, Denver.

Phipps Sanatorium Opened.—The Agnes Memorial Sanatorium at Montclair, founded by Laurence C. Phipps, at an expense of more than a quarter of a million, and dedicated to the treatment of pulmonary tuberculosis in memory of his mother, Mrs. Agnes Phipps, was formally dedicated with fitting ceremonies July 2.

Receive Degrees.—A class of 32 was graduated from the Denver and Gross College of Medicine. Prof. Victor C. Alderson and Rev. Charles S. Olmsted made addresses, and Prof. Herbert A. Howe of the Denver University conferred the degrees. In the evening the graduating class was given a banquet by the faculty, at which Dr. Sherman G. Bonney was toastmaster.

Personal.—Dr. Patrick V. Carlin, Denver, has been elected a member of the Board of Education for the City and County of Denver.——Dr. Arthur T. Blachly, Delta, has been appointed resident physician at the Hayward (Wis.) Indian reservation.——Dr. Carl Parsons has been made resident physician at the City and County Hospital, Denver.——Dr. J. M. Jordan has been appointed assistant county physician of Denver County, vice Dr. Seymour T. Jarecki, deceased.

DISTRICT OF COLUMBIA.

New Naval Medical School Building.—Ground has been broken for a hospital building in connection with the Museum of Hygiene and Naval Medical School, for which $125,000 was appropriated by congress. The building will be on the pavilion plan, with a central administration building and east, west and south wards.

Georgetown Graduates.—The Fifty-fifth annual commencement exercises of Georgetown University were held, June 7, when 32 men were graduated in medicine. Dr. George L. Magruder presided, President Daugherty conferred the degrees, and Assistant-Surgeon General George Tully Vaughan of the U. S. Public Health and Marine-Hospital Service delivered the doctorate address.

Personal.—Dr. Charles W. Richardson, Washington, has gone abroad.——Dr. Charles B. Purvis, Washington, has resigned from the Board of Medical Examiners, and Dr. Daniel S. Lamb has been appointed to fill the vacancy.——Dr. Patrick A. Lloyd has succeeded T. G. Jones as chief resident physician at the Casualty Hospital, Washington.——Drs. Ray D. Adams and Mahlon Ashford have succeeded Drs. Samuel L. Owens and Abrahams, as resident physicians at Georgetown University Hospital.

ILLINOIS.

Lawn Fete for Hospital.—The lawn fête given by the St. Francis Hospital Association at Evanston last week, netted $1,400 to the funds of the hospital.

Langdon Released Under Bonds.—Dr. P. K. Langdon, recently extradited by the English authorities, was brought back to Kankakee, July 14, by the sheriff, and on July 19 was released under a bond of $10,000, will be brought before the grand jury in October.

Personal.—Dr. John W. Bowling has been chosen to succeed Dr. John F. Barton as local surgeon for the Louisville and Nashville and Baltimore and Ohio railroads at Shawneetown. Dr. Frank Gardner has returned from Europe and is visiting in Sublette.——Dr. Frank N. Armstrong, Richmond, was seized with apoplexy while in McHenry, July 25.

Chicago.

To and From Europe.—Dr. Edmund J. Doering, sailed for Italy August 9.——Dr. Edward T. Alford has returned from Europe.

Patients Rob Physician.—Dr. Johann Harraes was held up in his office, July 26, robbed of $390 in cash and $500 in jewelry by two men who posed as patients.

Augustana Hospital.—At the recent meeting of the directors of this hospital it was announced that $20,000 had been bequeathed to the institution by the late Thomas D. Lowther.

Personal.—Dr. H. Gideon Wells has been made dean of medical work in the University of Chicago, vice Dr. E. P. Lyons, resigned to accept a position in Washington University, St. Louis.

Swedish Hospital Incorporated.—Articles of incorporation were issued, July 20, for the Washington Park Hospital, to be built near Washington Park. The institution has a capital stock of $50,000, and has at present accommodation for 30 patients in a building at Sixtieth Street and Vincennes Avenue.

Deaths of the Week.—Acute intestinal diseases caused 120 of the 473 deaths for the week ended August 6; consumption, 58; violence, 44; heart diseases, 34; Bright's disease, 33 and pneumonia, 27. The annual death-rate per 1,000 was 12.78, which compares very favorably with 14.29, the rate for the corresponding week of last year.

July Mortality.—The deaths for July were 1,958, 213 more than were reported in June, and 432 less than occurred in July, 1903. The death rate for the month was 11.95 per 1,000. The deaths under one year were 122 less, and those between 1 year and 5 years 106 less than in July, 1903. The health department attributes the low mortality to propitious weather and a remarkably good water supply. Acute intestinal diseases heads the list of death causes, with 333; consumption comes next with 233, and then follow violence, with 184, Bright's disease with 144, heart diseases with 143 and pneumonia with 123.

IOWA.

Accidents.—Dr. Thomas J. Maxwell, Keokuk, was run over by an automobile, spraining and abrading his knee.——Dr. Leo Louis, Parkersburg, sustained internal injuries and injuries to head by being thrown from his buggy July 24.

Fee Bill Adopted.—At a mass meeting of Des Moines physicians, July 28, at which 35 were present, a fee bill was adopted, providing for minimum charges of $2 to $5 for day visits; $3 to $5 for night calls; $15 for obstetrics, and charges for subsequent calls, and $2 for life insurance examinations. This fee bill is to be in effect after September 1.

Medical School Improvements.—At a meeting of the trustees of the Sioux City College of Medicine, August 3, a number of improvements for the college building were decided on. These include the rearrangement of the interior of the building, the provision of an additional lecture room, and the purchase of more microscopes and other equipment for the laboratories.

Personal.—Dr. Robert E. Conniff, Sioux City, has been elected president of the State Board of Medical Examiners.—Dr. Henry Matthey, Davenport, has been elected president of the State Board of Health, and Dr. Josiah F. Kennedy, Des Moines, secretary and editor of the Iowa Health Bulletin.——Dr. Henry Albert, professor of bacteriology in the Iowa State University, Iowa City, has assumed his duties as head of the bacteriologic department of the state.——Dr. R. E. Robinson, Waverly, sailed for Europe July 16.——Dr. Benjamin F. Campbell, after a year of post-graduate work in Chicago, has resumed practice in Burlington.

KENTUCKY.

Addition to Faculty.—Dr. Carl Weidner, Louisville, has been given the chair of pathology and histology in Kentucky University Medical Department.

Twice Acquitted.—Dr. Sarah A. Murphy, Louisville, who has twice been charged with murder by a criminal operation, was acquitted for the second time, July 14, the judge ruling that the prosecution had failed to establish a case.

Wathen Suggests Merger.—Dr. William H. Wathen, Louisville, announces that he thinks that the tremendous competition from medical institutions in other cities necessitates the consolidation of the five medical colleges in Louisville into two great universities.

Cars Must Be Sanitary.—The State Board of Health has entered on a vigorous campaign against unsanitary cars, paying especial attention to plush car seats, both for day cars and sleeping cars. It threatens to indict all railway companies whose lines enter the state unless they provide sanitary cars, sanitary bed clothing in sleeping cars, and adequate ventilation.

Personal.—Dr. Miles C. Dunn, Henderson, has been made chairman, Dr. Robert H. Moss, Niagara, temporary secretary, and Dr. Silas Griffin, Henderson, health officer, of the newly organized Henderson County Board of Health.——Dr. James W. Stephens, Hopkinsville, second assistant physician at the Western Kentucky Hospital for the Insane, has been made first assistant physician at the Central Kentucky Hospital for the Insane, Lakeland.——Dr. Malcolm H. Yeaman has succeeded Dr. Josiah G. Furnish as superintendent of the Central Kentucky Hospital for the Insane, Lakeland.

MARYLAND.

Many Autopsies Unnecessary.—The Baltimore County Commissioner declined to pay bills for postmortem examinations. The president expressed the opinion that many of them were unnecessary.

Typhoid Epidemic.—There are 80 cases of typhoid fever at Mount Savage, Allegany County, the result of a contaminated spring, which has been closed by the health officer. The disease is confined, with two exceptions, to men and boys. One death has occurred so far. The three physicians are kept busy night and day, and nurses have been sent from Cumberland.

Personal.—Dr. Thomas C. Baldwin, Gemmills, has resigned as health officer of the Seventh District, and has moved to Baltimore. The vacancy has been filled by the appointment of Dr. Eugene W. Hyde.——Dr. John E. Bolte, Harrisonville, was stricken with hemiplegia, August 4.——Dr. Charles W. Goldsborough of Walkersville had his arm severely lacerated by two dogs, while visiting a patient, August 4.

Baltimore.

Baltimore Medical College has new laboratories of operative surgery and clinical pathology and a new museum.

Purification of Water.—The water engineer is purifying the city drinking water with copper sulphate with apparent success.

Johns Hopkins Hospital.—The new surgical building (heretofore described in THE JOURNAL) will be ready for occupancy at the opening of the next session October 1.

The Health Status.—The health report for July shows a considerable decrease in infectious diseases as compared with the same month in 1903, namely: from 446 to 284. The general mortality is about the same.——During July at the public baths there were 61,232 visitors, of whom 8,406 were females, the largest number on record.

Modified Milk May Be Bought.—The Thomas Wilson Sanitarium is operating five milk dispensaries in Baltimore, where for ten cents a day three pints of properly modified milk can be obtained for feeding infants. Each dispensary has a physician and nurse, and any practitioner can order a supply of milk for the poor as long as needed.

University of Maryland.—A department of pharmacy has been created. A new dental building and new laboratories of physiology and pathology have been constructed. A fund has been set apart by the trustees for research work. Lectures on the history of medicine will be delivered weekly, commencing October 8. There is a fine medical library and collection of current journals.

Maryland Medical College.—Dr. J. B. Schwatka has been elected dean, vice Dr. J. William Funck. Drs. Charles E. Simon and Pearce Kintzing have been added to the faculty. The former will give a practical laboratory course in clinical diagnosis to all members of the graduating class; the latter a course on physical diagnosis and clinical medicine. The plans have been formulated and the money raised for the new Franklin Square Hospital, but the work of building will not be begun until after the next session.

The Smallpox Crusade.—The recent crusade against smallpox was highly satisfactory. In all 72,850 persons were vaccinated, of whom 37,750 were treated by the 25 special vaccine physicians, 5,100 by the health wardens, and 30,000 by private physicians. The total cost to the city was $6,750, $3,750 of which paid for special salaries, and the remainder for vaccine points. Factory and mill owners now recognize the necessity of the measure and demand vaccination certificates from their employes. The effect of the crusade is shown in the fact that in May 6 cases of smallpox were reported, in June 5 cases, and in July only one case.

Personal.—Dr. J. B. Schwatka sailed for Europe August 4. He was given a reception by his friends the day before he sailed.——Dr. William H. Welch left here, August 8, for San Francisco, where he is to deliver the Lane lectures on infection and immunity.——Dr. William Osler is chairman of the Department of Medicine of the International Congress of Arts and Science, to be held in St. Louis, September 19 to 25. Among the speakers from Baltimore will be Drs. William S. Thayer and Howard A. Kelly.——Dr. Isham R. Page is at Northport, Maine.——Drs. J. William Funck and Seth S. Ullrich are spending the month at Ocean City.——Dr. Henry M. Hurd will spend September in the Adirondacks.——Dr. H. Boyd Wylie is at Mountain Lake Park.——Drs. John N. Mackenzie and William T. Howard are at Narragansett Pier.——Dr. S. Gibbons Smart of Roland Park has removed on account of his health to Bedford City, Va.——Dr. M. Gibson Porter, Lonaconing, has taken charge of his practice.——Dr. Charles C. Bombaugh is at Newport.

MASSACHUSETTS.

Domestic Science for Nurses.—The Children's Hospital, Boston, has added to its curriculum for nurses a four-months' course in Simmons College, the new training school in domestic science.

Milk and Noise.—Brookline has not only followed Boston in making a careful bacterial examination of the milk supply of the town, but in requesting the dealers to use more caution about early morning noises, much of which has been shown to be unnecessary.

Sudden Rise in Mortality.—After a series of weeks of most unusually low death rate, the Board of Health of Boston reports for the week ended August 6, 250 deaths, or an annual rate of 21.15 per 1,000. The great increase was in young children, 21 deaths during the week being ascribed to "cholera infantum." It is fair to presume that physicians use this term to cover cases of ileocolitis, for not a case of true cholera infantum has been received at the Boston Floating Hospital this summer, and over 500 patients have been treated there during the past four weeks.

Summer Statistics.—For the ten weeks ended August 6 there were reported in Boston 1,824 deaths, an average annual death rate of 15.57 per 1,000. There were 465 cases of diphtheria, with 31 deaths; 101 cases of scarlet fever, with 3 deaths; 119 cases of typhoid fever, with 19 deaths; 548 cases of measles, with 15 deaths; 401 cases of tuberculosis and 225 deaths; 140 deaths from pneumonia, 3 from whooping cough, 179 from heart disease; 28 from bronchitis, and 30 from marasmus; 410 died under one year old and 575 under five years. In one week there was no death from diphtheria reported, the first time since 1901. In one week the death rate was only 11.58 per 1,000, and in another 12.06.

MISSOURI.

Will Elevate Standard.—The following requirement was approved by the State Board of Health, and became operative July 5:

> Every applicant for license to practice medicine in the state of Missouri shall present documentary evidence of having a university or college degree or high-school diploma; in lieu thereof, said applicant must pass a satisfactory examination before the state superintendent of public instruction on all branches embraced in a four years' high school course.
>
> This is an absolute requirement, and no applicant will be allowed to enter the examination without having complied with this order.

Licenses Revoked.—The State Board of Health, on July 6, revoked the license to practice medicine of Dr. Samuel F. March, secretary of the Kansas City Eclectic Medical University, who was charged with issuing irregular affidavits to students who graduated from the college last spring. He was summoned before the board and admitted that the affidavits were irregular. The board also revoked the license of J. F. Duvall, charged with obtaining a license from the board on one of the irregular affidavits of Dr. March. A license to A. S. McCleary was refused because his affidavit was also one of the irregular ones sworn to by Dr. March. The applications of five other members of the school's graduating class of last spring were considered. Their records were found to be clean and the board voted to issue them licenses.

NEW YORK.

Convalescent Ward.—A convalescent ward is being built at the Fresh Air Mission Hospital at Athol Springs.

Personal.—Dr. John Van Duyn has resigned from the Syracuse Board of Education.——Drs. Nathan W. Soblet and William S. Rambo, Rochester, have been appointed local examiners in midwifery.

Disinfection of School Books.—The Buffalo Department of Health is disinfecting 109,650 volumes of books of the public schools by the use of formaldehyd gas. Since this work has been undertaken by the city there has been a decrease noted in contagious diseases, particularly scarlet fever and measles.

Joint Meeting.—After due consideration on the part of the officers of the Northern New York Medical Association and of the St. Lawrence County Medical Society, it has been decided to hold the meeting of both bodies on October 18, at Ogdensburg, N. Y., the association holding session during the afternoon and the society in the evening.

High June Mortality.—The total deaths for June were 10,997, or about 1,500 in excess of the average for that month in the last five years. This is partially to be accounted for by the increase in deaths from violence in New York City, due to the *General Slocum* holocaust. Deaths from cerebrospinal meningitis were the same as in April, and those from consumption exceeded the deaths from this cause in June, 1903, by 150.

State Commission in Lunacy Appointments.—Dr. Sidney D. Wilgus, New York City, has been appointed by the State Commission in Lunacy as chief examiner, with a salary of $5,000. The last legislature passed a law creating a state board of alienists to act in concert with the United States examiners at the port of New York in the inspection and return to their own country of all emigrants suspected of insanity, epilepsy or imbecility. As assistant examiners and members of the board the commission appointed Dr. George D. Campbell of New York City, and W. E. Sylvester of College Point, each with a salary of $3,000.

New York City.

Summer Home and Hospital for Poor Children.—Miss Margaret L. Chanler has transformed her house into a summer convalescent home and hospital for poor children, especially of Christ Church parish.

Shrady Resigns.—Dr. George F. Shrady, after nearly forty years of continuous service, has resigned the editorship of the *Medical Record*, Dr. Thomas L. Stedman, who has been associate editor for nearly twenty years, being appointed in his place. The personnel of the editorial staff, it is said, remains as before Dr. Shrady's resignation.

Contagious Diseases.—For the week ended July 30 there were reported to the sanitary bureau 341 cases of tuberculosis, with 170 deaths; 202 cases of diphtheria, with 24 deaths; 183 cases of measles, with 8 deaths; 88 cases of scarlet fever, with 8 deaths; 83 cases of typhoid fever, with 13 deaths; 11 cases of varicella; 1 case of smallpox, and 25 deaths from cerebrospinal meningitis.

Rockefeller Institute Plans.—The plans for the Rockefeller Institute have been filed and work will be begun soon. It is estimated that the building alone will cost $325,000. Mr. Rockefeller has already donated $1,200,000. In addition to the most perfectly equipped hospital in the world, there will be scientifically constructed accommodations for horses and other animals to be used for purposes of inoculation. One of the first enterprises of the institute will be the endeavor to find and identify the germ of dysentery, and to ascertain means of preventing and curing the disease.

NORTH CAROLINA.

Wake Forest School of Medicine has commenced work on its new building, which is to cost $30,000. The cornerstone was laid at commencement time, and Dr. J. Allison Hodges, Richmond, delivered the address before the medical class.

Donation for Negro Hospital.—Dr. William H. Sprunt, Wilmington, has donated $10,000 to build an annex to the James Walker Memorial Hospital, to be used in erecting a dormitory for nurses, and a building for the exclusive care of negroes.

Smallpox in the State.—For the year ended May 1, 1904, 5,370 cases of smallpox were reported, 914 more than for the previous year, with 69 deaths. In Guilford County there were but 101 cases, of which 94 were among the whites. Robeson County reports 1,000 cases, of which 300 were among the whites. In Madison County there were 587 cases, all but 12 being among the whites. The disease was of a bad type in Davidson County, where 25 deaths resulted.

Commencements.—North Carolina Medical College, Charlotte, formerly the Davidson Medical School, at its first commencement exercises, graduated a class of 17. Dr. J. Howell Way, Waynesville, delivered the doctorate address, and Dr. J. T.

Monroe, Davidson, presented the diplomas.——The Medical Department of the University of North Carolina, Raleigh, held its graduating exercises at Chapel Hill. A class of four received diplomas, and Dr. Louis J. Picot, Littleton, delivered the address of the evening.

State Society Election.—The fifty-first annual meeting of the Medical Society of the State of North Carolina was held at Raleigh, May 24-26. The following officers were elected: President, Dr. David T. Tayloe, Washington; vice-presidents, Drs. Charles A. Julian, Thomasville, John T. Burrus, High Point, and Isaac W. Faison, Charlotte; secretary, Dr. J. Howell Way, Waynesville; treasurer, Dr. Grimada T. Sykes, Grissom; Dr. Chase P. Ambler, Asheville, orator, and Dr. John H. Tucker, Jr., Henderson, essayist. The society is to meet at Greensboro next year.

NORTH DAKOTA.

Cass County Physicians.—Dr. John D. Hennings, Fargo, has been appointed physician of Cass County, with the following assistants: Drs. Krekore H. Mallarian, Fargo; A. F. Goffelee, Grandin; Evan Hyslin, Kindred; Samuel Mitchell, Mapleton; Kelsey, Erie; Hezekiah J. Rowe, Castleton; Henry G. Fish, Wheatland; William Scanlan, Page, and John W. Campbell, Tower City.

State Society Meets.—At the meeting of the North Dakota State Medical Society in Fargo, much time was taken up in the consideration of the new constitution and by-laws to correspond with those of the American Medical Association. Dr. James A. Rankin, Jamestown, was elected president; Dr. Paul Sorkness, Fargo, vice-president; Dr. Ernest C. Wheeler, Fargo, secretary, and Dr. William H. M. Philip, Hope, treasurer.

June Vital Statistics.—During June 288 births were reported to the State Board of Health and 118 deaths. Fourteen cases of tuberculosis were reported, with 11 deaths; 7 cases of typhoid fever, with 2 deaths; 22 cases of diphtheria, with no deaths; 21 cases of scarlet fever, with 1 death; 8 cases of measles, with 1 death; 6 cases of smallpox, with no deaths; 9 cases of other contagious diseases, with no deaths, making 15 deaths from contagious diseases.

OHIO.

Must Include Anatomy.—The Ohio Medical University, Columbus, will no longer allow credits on the degrees issued by colleges unless the prescribed courses shall include anatomy and other essential studies.

Mayor's Veto Sustained.—The last official communication of the late Mayor Jones of Toledo to the city council was a veto of an ordinance granting right of way to physicians and ambulances, on the ground that it established a special privileged class. The veto was sustained by a vote of 9 to 7.

Anti-Tuberculosis Dispensary.—The trustees of Western Reserve University, Cleveland, have voted to take part in the conflict against tuberculosis by establishing a dispensary in connection with its medical department, whose function will be chiefly preventive. It registers those infected with the disease, locates houses in which tuberculous people live, educates the people along fundamental hygienic lines, and its agents visit the homes of the sick, and give instruction in the care of those afflicted with the disease.

Toledo University Department of Medicine.—The Toledo University has established its medical department, Toledo Medical College. The work under the new auspices will begin next month. The following-named men have been selected as faculty of the new department:

Drs. William A. Dickey, dean; Park L. Myers, secretary; Joseph T. Woods, emeritus professor surgery and clinical surgery; John North, emeritus professor nose, throat and lungs; Hon. D. R. Austin, emeritus professor medical jurisprudence; Drs. William J. Gillette, professor gynecology, abdominal surgery and clinical surgery; William A. Dickey, professor principles and practice of medicine and clinical medicine; Daniel E. Haag, professor therapeutics, microscopy and clinical medicine; Park L. Myers, professor chemistry, toxicology and state medicine; Willis W. Grube, professor clinical medicine and lecturer on anesthetics; Oscar Hasencamp, professor principles and practice of medicine and electro-therapeutics; James Donnelly, professor principles and practices of surgery and clinical surgery; David E. Bowman, professor of obstetrics; Elmer W. Heltman, professor ophthalmology and otology; Lyman A. Brewer, professor surgical and clinical surgery; Bernard Becker, professor surgical pathology; John S. Pyle, professor physiology and embryology; James A. Duncan, professor proctology; Louis Miller, professor nervous diseases; Julius H. Jacobson, lecturer on physical diagnosis and clinical surgery at Lucas County Hospital; George F. Wells, LL.B., professor medical jurisprudence; Drs. Herbert E. Smead, professor of pediatrics; Howard L. Green, lecturer on minor surgery; Charles Louy, lecturer on osteology, syndesmology and assistant demonstrator of anatomy; Adolph J. Girardot, lecturer on materia medica; William H Fisher, lecturer on gynecology and clinical surgery; Albert L. Sternfield, professor histology, pathology, director of biologic laboratories and instructor in clinical microscopy; Nelson H. Young, lecturer on mental diseases; Edwin D. Tucker, lecturer on dermatology; Louis M Dolloway, lecturer on nose and throat; Madison E. Baldwin, lecturer on genito-urinary diseases; James T. Lawless, special lecturer clinical surgery, St. Vincent's Hospital, and L. A. Levison, lecturer on anatomy.

PENNSYLVANIA.

Typhoid Fever at Pittsburg.—The bureau of health reports the prevalence of typhoid fever in Pittsburg and states that the number of cases bids fair to equal or surpass the record of last summer.

Butler's Water Supply Improved.—Tests of the water supply of Butler have been made at varying intervals since the epidemic. In all 25 tests have been made, and all thus far have been favorable. The last two tests were conducted by Dr. Francis C. Phillips of the Western University of Pennsylvania, who reports that the specimens contained 15 and 21 bacteria per cubic centimeter, and that the colon bacillus was not found.

Philadelphia.

To Enforce Vaccination.—The report of the 50 medical inspectors for last week shows that 6,674 visits were made, that 960 vaccinations were performed, and that 194 persons refused to submit. The names and addresses of these individuals are registered in the department of health and rigid measures will be instituted to enforce vaccination.

Health Report.—The city's health continues exceptionally good. The deaths reported for last week aggregated 428, a decrease of 6 from last week and an increase of 5 over the corresponding period of last year. Smallpox has entirely disappeared, no cases having been reported since July 9. This is the longest period the city has been totally free from the disease for several years. Typhoid fever, on the other hand, continues present throughout the city, though the disease is most prevalent in the district of Kensington. The cases reported for the week numbered 84, an increase of 22 over last week. There were 179 cases of contagious disease reported.

Health of Pupils.—The report of the inspection of public schools for April, May and June shows that of 155,707 children examined, 6,936 were excluded because of disease. In 5,150 the eyes were affected. Of this number 1,807 were obliged to wear glasses; 317 schools were visited, comprising the combined grammar and primary, the grammar, primary, combined primary, consolidated, combined grammar, kindergarten, and special schools. Among the principal causes mentioned for the exclusion of the pupils were: Pediculosis, 3,854; ringworm, 434; defective vision, 421; eye affections, 429; tonsillitis, 349; impetigo, 407. The inspection is to continue monthly after the schools open next month, as the results show that the general health of the pupils is decidedly improved.

Hospital Work for July.—At St. Agnes Hospital 164 patients were treated in the wards; 593 new cases and 2,103 old cases were treated in the various dispensaries.——In St. Joseph's Hospital 298 patients were treated in the wards and 2,507 patients in the different dispensaries.——In the Presbyterian Hospital 422 patients were treated in the wards, and 2,382 in the dispensary.——In the Medico-Chirurgical Hospital 193 patients were treated in the wards, 1,313 in the surgical dispensary, and 1,325 in the eye department. A total of 5,899 patients was treated during the month.——Three hundred and thirty-five patients were admitted to the wards of the Pennsylvania Hospital; 2,193 were treated in the receiving wards, and 5,746 in the out-patient department.——In the wards of the Episcopal Hospital 287 patients were admitted and 285 discharged, and in the different dispensaries 7,711 patients were treated.

FOREIGN.

French Donations to the Russian Red Cross.—The ambassador of France to Russia has presented to the Russian Red Cross the sum of $23,000 raised by subscriptions through the lay press of Paris.

Number of Medical Students in Germany and Switzerland.—The number of medical students enrolled in the universities of Germany for the current year is 6,049. In Switzerland there are more women than men studying medicine, the total being 1,654, of whom 801 are women, mostly Russians.

Record-Breaking Fees.—The community of Kallstadt, Germany, has about 1,100 inhabitants, and has recently installed a medical school inspector with the annual salary of 25 marks, or about $6.25. He is to have about 155 school children to

inspect four times a year. He thus receives four cents for each child, or one penny for a single examination.

Warning Against the Study of Medicine.—The organized profession in Germany has issued a circular warning youth against the medical career. It points out the over-crowding of the profession in comparison to the population, and depicts the material depression prevailing in its ranks from the lack of restrictive legislation against quacks and of regulation of the sickness insurance societies.

Ross and Weir Mitchell Elected to the Paris Academie de Medecine.—The candidates for the two vacant places of corresponding members in the medical section of the French National Academy of Medicine were Ronald Ross of Liverpool, our own Weir Mitchell, Mosso of Turin, Ehlers of Copenhagen, Unna of Hamburg and Pick of Prague. Ross and Weir Mitchell were elected by large majorities at the meeting on July 19.

Konig's Retirement.—Frank König of Berlin has just witnessed the completion of the model surgical clinic erected for him at the Charité, and now he retires, as he has passed the age of 72. His successor is already announced, A. von Eiselsberg of Vienna, Billroth's favorite pupil. He has already been connected with a German university, having been professor of surgery at Königsberg, 1895 to 1901, after having served a term at Utrecht.

Loss to Science of a Living Students' Manikin.—The death is announced of the Vienna woman, who supported her family by serving as a subject for the study of the upper air passages. She had followed this means of livelihood for twenty years, and had cultivated her vocal organs so that she had voluntary control over them and could hold them still, even when they were being touched, thus affording incomparable opportunities for study of the respiratory organs. She had also learned so that she could tell the investigator when his instrument was following a false route or any other mistake was being made. She always carried a number of "foreign bodies" in a black bag, and would introduce one at a time into the upper air passages and allow the student to search for and extract them.

Russian Tributes to their Japanese Opponents.—The *Russische med. Rundschau* quotes a Russian physician, who has lived long in Japan, to the effect that the most astonishing cleanliness and system reign in all the Japanese Red Cross hospitals and dispensaries. The beds are wide and remarkably neat. A letter from a Russian physician at the seat of war (Wafangou), published in the last *St. Petersburg. med. Wochft.*, describes the battles of June 13 and 14 as "frightfully bitter." "Nothing was to be seen and heard but smoke, dust, noise, thunder and tumultuous din. The Japanese came on with an altogether unexpected and all-compelling energy. Our troops behaved nobly, but no one could withstand the firing. The tops of the hills were literally swept bare of foliage, and after the battle looked like ploughed fields."

New Technic of Sex Determination.—Ducceschi and Tallarico of Florence, Italy, recently described researches which signalize a new, rational and ingenious mode of studying the problems of the determination of the sex of the embryo. Their communication was presented to a local scientific society and published in the *Archivio di Fisiologia* for July. It is based on the recently established fact that after injection into an animal of the elements constituting an organ in an animal of a different species, the serum of the first animal acquires a destructive action for the organ in question. They assumed, for instance, that injection into a gravid animal of substances known to have a specific, destructive action on the testicles, would entail the passage of these substances into the fetal organism, and have an inhibiting action on the development of the male sexual organs, while the female sexual organs would not be affected. Consequently, if the injection were made in the earliest stages of gestation, before the sex of the fetus was actually established, it would prove the determining factor in deciding the sex of the embryo. They have been experimenting with an orchi-toxic serum on gravid guinea-pigs, and although their experiences are as yet very limited, they suggest a promising field for further research.

Discovery of the Micro-Organism Causing Pulmonary Phthisis.—Prof. Otto von Schrön of Naples is one of the most venerated masters of pathologic anatomy of the Italian school. He has recently announced that tuberculosis and phthisis of the lungs are two separate morbid entities, although very frequently they may occur together in the same individual. The causal agents differ in each, by their structure, morphogenesis and biologic characteristics. The accumulations of caseous material in the phthisic lung are not necrotic tissue as hitherto supposed; they are formed by a highly organized germ, which grows in threads and branches, an arborescent microbe, with distinct fructification, taking stains readily, in all the phases of its morphogenetic evolution. It can be obtained in pure cultures by the drop method or in symbiosis with the bacillus of tuberculosis in cultures *in vitro*. The phthiseogenic microbe substitutes the lung tissue, and does not cause necrosis like the toxins of the tubercle bacillus. Each phthisic cavity presents three layers, the outer one formed by the evoluting forms of the microbe, while the inner layers are the dead and decaying forms, sometimes with and sometimes without the presence of tubercle bacilli. It has a certain superficial resemblance to hyphomycetes, but differs in essential points. The arborescent ramifications can be seen with a Zeiss oil immersion 1/18, but Schrön has devised a technic for investigation by which the ramifications can be seen with the naked eye. We find life in the caseous material where we supposed there was nothing but death and decay. He calls it the filiform microbe, as the thread formation is its most striking characteristic, possibly compelling its classification among the fungi. It passes through a phase of thread and capsule formation, with a racemose and lichenoid growth, and finally into mucous metamorphosis, which is the stage in which it appears usually in the sputa. It does not take the same stains as the tubercle bacillus, but stains readily with certain others. The products of its secretions are prisms with a hexagonal base, polarizing light, while the products of the tubercle bacillus are non-polarizing rhombi. Both forms of crystals are generally found in the sputa of phthisic subjects.

Correspondence.

Co-ordination Between Clinical and Didactic Work.

PHILADELPHIA, Aug. 2, 1904.

To the Editor:—May I avail myself of the opportunity, which your Educational Number will give, of expressing some views on medical education arrived at after a number of years' service as a teacher of clinical medicine? The remarks I shall have to make relate to the practical branches only; the teaching of the purely scientific subjects is quite another matter. I wish further to add that my remarks have reference to the senior year of study. Physical diagnosis, clinical pathology and history taken properly belong to the pre-senior years.

It would be impossible to draw up an ideal scheme for the teaching of medicine and surgery without taking into consideration available material, its distribution and other local conditions, the number of students, etc. Whatever the conditions, there must be a co-ordination of different methods of teaching and a suitable apportionment of the student's time. When laboratory and clinical teaching were introduced into the curriculum of medical schools many were led to the conclusion that the didactic lecture was doomed to suppression, a conclusion which seems to me unwise and unwarranted by experience. It may be freely granted that the amount of time devoted to such lectures in some schools is still excessive, but, on the other hand, it is too exalted appreciation of practical work that would supplant the lecture entirely. The presence of the teacher, the *vox viva*, and the resulting impression made on the average student's mind give the didactic lecture an advantage over text-book study that is real and appreciable. Practical work must not be compared with the lecture, for no amount of clinical material and no reasonable lengthening of the medical course would make it possible for the student to gain the desired acquaintance with disease in its many variations through practical work done in the medical school. The comparison properly lies between didactic work and text-book study, and here certain advantages are undoubtedly on the side of the lecture. Reading must, of course, form a supplemental part of the student's training, and I am not disposed to deny that there may be a student now and then who could with advantage omit the lecture in favor of study, but such individuals are exceptional.

The subdivisions in the practical teaching of medicine and surgery now commonly recognized are: The clinical lecture, clinical conference, ward class, work in the wards of the hospital and dispensary, and laboratory classes. Each of these

has a separate sort of usefulness and must be given a share of the total available time in accordance with local facilities. Nowhere, however, can the best results be achieved unless the advantages of these different methods of instruction are secured.

The ward class is valuable according to the way in which it is conducted. My experience with students at the University of Pennsylvania has been that they learned more of that which it is most important to learn, in ward classes than in clinics, clinical conferences or work in the wards. The ward classes are composed of not more than ten men, and each group is taken to the bedside by an instructor, who usually demonstrates but one case during the hour. The instructor reviews this case thoroughly, taking up the history, the symptoms and the physicial examination systematically. The classes are small enough to allow each student to percuss, auscultate, etc. The important advantage of such a class is that it teaches *method*, and it is method more than a mere collection of facts that should be taught in practical courses. Compare such a class with the large "ward classes" of the English schools and the advantage of the former becomes obvious. The English ward class, as I have seen it conducted, is a class of from 20 to 30 men, who walk through the ward, stopping at one bed after another, to be shown some interesting feature in this or that case. The result of such a plan must be to teach superficiality and unmethodical work. In reality this is not a ward class at all: the same instruction could be given equally well as a large clinic.

An institution committed to the small ward class method must be prepared to supply a large number of instructors for the subdivision of the class in several fold as great as when the larger classes are given. At the same time the number of teaching hours given to each student will necessarily be less than could be given to larger groups, but the advantage of the method more than compensates for the reduction in hours, whatever appearances may seem to indicate.

The value of ward work depends on the system and to a large extent on the student. Our method is to assign the members of the fourth-year class to duty in the wards, each student being placed in charge of certain beds. During one hour each day he is required to examine his patients, make blood counts, urine examinations, etc., under direction of the resident physician; the following hour one of the physicians or assistant physicians makes the "rounds" accompanied by all the students working in that ward. At each bed he questions the student in charge and discusses the case briefly with all. Valuable as this method is when combined with the ward class (or, better still, when preceded by the ward class), the ward visit taken by itself would be inadequate. It gives the student a certain responsibility and independence which brings out his best work under proper guidance, but unless the supervision is immediate and constant (which is almost impossible) it fails, unless provision is elsewhere made to teach the required method.

The clinical conference is properly compared with the larger ward classes alluded to before. Our method is to assign two students to a case in the ward and to discuss this case with a group of from 25 to 50 students before whom the two, specially selected to study the case, make their report a week after the assignment. A number of the students may be called to the bedside to confirm or correct assertions of those reporting the case, thus increasing the interest of the class and at the same time utilizing the material for the benefit of the greatest number possible. The advantage of the clinical conference is that it gives the student the greatest independence in case study, with the subsequent advantage of criticism by his fellows and the instructor. It can not, however, supplant the ward class or ward work.

The general clinic or clinical lecture has somewhat the same advantages as the didactic lecture in so far as the spoken words of an experienced teacher impress themselves on the student's mind more indelibly than the best text-book descriptions, and the practical demonstration of the method of obtaining a history, of conducting a physical examination and of forming deductions is of incalculable advantage. It may be said that but few of the students in a large clinic are near enough to the operations or even the visible signs in medical cases. This is undoubtedly a defect of the general clinic, but its other advantages make it indispensable in a properly rounded medical course. As long as judgment based on experience and deduction are a necessity to medical diagnosis, the practical exposition of a master's method will be a useful part of teaching. Physical examination, the procedures of microscopic and chemical investigations and the systematic consideration of symptoms may be better taught in the ward class, laboratory, didactic lecture or library, but diagnosis in its broadest sense and refinements of treatment are best imparted in the clinic.

Work in the hospital dispensary or out-patient department and laboratory classes are properly a part of the pre-senior year of study, as they are in most respects preparatory to the finished work of the last year and necessary to the student's proper utilization of the advantages of his final year of study.

Whatever proportion of time is properly allotted to each of the methods of practical teaching, it is always important that the peculiar advantages of the methods be recognized to the end that their individual merits may be realized. Clinics are sometimes conducted as didactic lectures, while ward classes or conferences are converted into clinics. Such changes detract from the system as a whole and defeat its proper purpose. Above all else, the most essential requisite to successful teaching is a well conceived system conscientiously carried out.

ALFRED STENGEL.

The Failure of the Laboratory Worker as a Practitioner.

GALESBURG, ILL., Aug. 1, 1904.

To the Editor:—I was one of those who enjoyed the hospitality of the University of Pennsylvania during the dedication of its new medical laboratories at the close of the Atlantic City session. I was greatly impressed, as every one of the Association members must have been, with the evident completeness of the great building for the purposes for which it was designed. I was also interested in viewing the exhibit of the work which had been done in recent years by the students in the medical department, the exhibit from the course in surgical pathology being especially fine. From Philadelphia I went to one of the coast cities in the East, where a large number gather each year for medical instruction. There I learned personally of some of the methods of instructing medical students, both graduate and undergraduate.

It has been my privilege and pleasure within a few years to have associated with me some of the younger men who were the products of the present educational methods in medicine. I regret to say that what they brought to me, practically, was not an unalloyed advantage. In three instances they had been sent out from as many recognized schools. One graduate, indeed, was thrice the recipient of a gold medal for proficient and accurate work during his medical course. But in the small laboratory of a fairly successful practitioner, and away from the apron strings of their instructors, the accurate and therefore usable knowledge which these young men possessed, was a minus quantity. To one who had been trained in a large eastern school at a time in the long ago, when twenty lessons comprised the course in histology, pathology and bacteriology, it was felt that these young men were needed. They came, and they all went the same road. For pathology they brought guesswork; for bacteriology, guesswork; for blood and urinary examinations, guesswork.

Now, some one in defense of these young men, may say that the above statements can not be literally true, if the young men were of average ability. But their average ability was, and is, unquestioned; and they were given every facility for scientific work. True it is, that they possessed knowledge of these subjects, but it was rudimentary to the degree that it did not rise above the rule in any well-regulated physician's office making no pretensions to special knowledge. With an experience such as this, educational methods in medicine had an added interest.

In the city last referred to I visited one school which, however, does not possess the degree giving power, but whose facilities for good clinical work are recognized everywhere. In the four weeks that I was there I saw and heard some things that, partially, at least, explain why my assistants, when they came out of school, were not ready to practice medicine any more than were their forefathers. To illustrate: One young man who had been in practice six years came in to take a course on the blood and urine. He had but two weeks to devote to these subjects, and knew nothing of them except what was gained from his college course six years before. He commenced his work by studying the urine with the microscope, and continued this until two days before he was to leave the school. In the remaining two days he was given instruction on the blood. This consisted of the writing in a book by the instructor of the names of the various objects found in the blood plasma, also a demonstration as to the method of counting the red blood corpuscles. This was the first day. The second and last day of the course was devoted to counting the white blood corpuscles, and the exhibition of a number of slides showing the various forms of the malarial plasmodium.

During the course the instructor was overheard to remark to this would-be seeker after medical knowledge that he was very fortunate in taking special instruction on these subjects, because in the regular graduate schools it was impossible to devote the time necessary for their proper understanding. This instructor must have known, because he holds a professor's chair in one of the eastern graduate schools.

I know this to be an extreme illustration; but, unfortunately, when we attempt to grade up we find enough of incomplete medical instruction in all of the schools, both east and west, to account for the personal experiences related above. And so I am going to venture the criticism, without knowing much about the subject—except from the standpoint of the user of the products of these methods—that too much that is impracticable for use by the busy practitioner working alone, is attempted in our schools.

Many patients will prevent the unaided physician from even attempting an accurate diagnosis; hence medical men are drifting into specialism, because they instinctively feel that this will give them a better opportunity to see a larger number of cases of one class. All things being equal, it will; but the result usually is that we then have a one-sided practitioner, which is unfortunate both for medicine and the public. After the specialist has learned his limitations he calls to his aid other specialists. This has brought about the newest phase of the practice of medicine, known as "passing them around."

As a general proposition, the man in medicine, be he general practitioner or specialist, working alone, is seriously handicapped because time prevents his using the very methods that would mean so much for him in the betterment of human health. The lone specialist, under these conditions, can not hold his place; and the general practice of medicine will likewise fail to progress in proper measure until some method can be adopted whereby the profession, in larger numbers, can really use the facts provided by the schools and laboratories. Too many subjects are imperfectly taught; the profession crowded with more than it can carry in the way of undigested knowledge. This can be said of all professions, and all teaching; but it ought not to be true of medicine. The public has been taught of late that the science of medicine is traveling in seven-league boots. This is true in the greater measure only of that part which deals more particularly with the investigation and experimental side of medicine. I repeat, unfortunately, the results attained by this class of workers can not find its highest place until it can be utilized by all. The schools and laboratories are never going to get this knowledge into the hands of the profession while the present methods for its dissemination are depended on. The supply is greater than the ability of the average man to use it.

That a way to use it will be found finally I am convinced. I am not so sure but that the way has already been pointed out. The men who have formed (in the larger cities mainly) the more or less loose alliance whereby it is possible to follow the reprehensible practice of passing patients around, point the way. These practitioners are usually a bunch of specialists who are agreeable to each other.

The ideal state will be when these men are gathered together in one office and under a joint management. A patient entering such an office would be thoroughly examined during his first consultation. The results of such an examination, submitted to the general medicine man of the combination, or the surgeon, would insure in the beginning that consideration which is absolutely necessary for the patient's ultimate and best welfare. Only by some such method as this can the advanced work of the colleges and laboratories be utilized.

J. F. PERCY.

Indorsement in Lieu of Reciprocity Between State Licensing Boards.

CAMDEN, N. J., July 5, 1904.

To the Editor:—I take pleasure in forwarding you resolutions on the New Jersey method of interstate exchange of medical licenses, which I introduced at the last meeting of the National Confederation of State Examining and Licensing Medical Boards, Atlantic City, June 6, 1904. After discussion the resolutions were ordered to lie on the table, to be printed by the secretary, distributed among the members and presented for consideration at the next meeting. I would be obliged if you would print them in THE JOURNAL. E. L. B. GODFREY.
Secretary of the State Board of Medical Examiners of New Jersey.

THE PROPOSED RESOLUTIONS ON INTERSTATE INDORSEMENT VS. INTERSTATE RECIPROCITY.

WHEREAS, National legislation can not affect the question of state jurisdiction in medical practice without the surrender of definite state sovereignty, and

WHEREAS, State medical examination is the basis for state medical license, or the indorsement of a license issued after an approved examination of another state, and each state is the judge of the qualifications of its medical licentiates, and

WHEREAS, It is manifestly unjust and a cause of open complaint by the profession to compel an experienced physician, licensed after a state examination, to undergo a second examination (practically a re-examination in the same elementary branches) on removing from one state to another, when the requirements for medical license in the two states are substantially the same, or lower in the state from which indorsement is asked; therefore,

Resolved, That it is the sense of this confederation that, among those states whose standards of requirements are equal or substantially the same, their licentiates by examination who can meet the moral, academic, medical and examining requirements of the state whose indorsement is asked, are entitled to and should be indorsed, irrespective of reciprocity.

Resolved, That when the standard of requirements of any two states are unequal, it is in the interest of the profession that the state having the lower requirements should indorse the examined licentiates of the state having the higher requirements, irrespective of reciprocity, when such candidates can meet every legal and educational requirement of the indorsing state.

Resolved, That reciprocity limited by statute to reciprocating states, which demands equal rights and privileges in return as conditions of indorsement, with the purpose of compelling recognition of its own licentiates, is detrimental to and retards the progress of the profession, because: 1. It restricts the extension of indorsement by its limitations. 2. It causes hardship to the profession because of its uncertain tenure. 3. It excludes indorsement from states having higher requirements by reason of which reciprocity can not be effected. 4. It refuses recognition to distinguished physicians of non-reciprocating states. 5. It recognizes neither the merit of a state examination nor that of the licentiate as compared with reciprocity. 6. It tends to maintain standards at the level of the lowest reciprocating state, and offers no inducement for a state to raise its standards above those of its reciprocating neighbors. 7. It practically involves an omnibus indorsement, without inquiry as to the status of the individual candidate, and without discrimination, since all licentiates of a state stand legally on an equal footing. 8. It is impractical for adoption by any considerable number of states, because of the difference in state laws, standards and population.

Resolved, That reciprocity based on a voluntary agreement of state boards is, like statutory reciprocity, impractical, because: 1. There is no uniformity in state laws and no ability to enforce them. 2. When differences arise between examining boards, in respect to the status of colleges, the grade of examinations or the eligibility of candidates rejected by one board for examination by another, there is no law, national, interstate, or state, to adjust the differences or to enforce the agreement, which may be broken at the pleasure of either board and without redress.

Resolved, That interstate indorsement, authorized by statute and exercised at the discretion of a state medical licensing board, irrespective of reciprocity, based on the substantial equality of educational requirements, on a state examination satisfactory and approved as to kind and grade, and on the individual merit and the professional qualification of the candidate for indorsement, is far better than indorsement based on either statutory or voluntary reciprocity, and tends more than either to further the cause of higher medical education and the autonomy of the profession throughout the country. 1. It is good state policy, since it neither

denies citizenship nor the right to practice to any physician entitled through merit to its privileges. 2. It makes the state the sole judge of the qualifications of its licentiates by enforcing the same requirements for indorsement as for examination for license, thus placing all licentiates on the same footing. 3. It accepts a state examination for what it represents as an examination, but not as more important than the merits and qualifications of the candidates for indorsement. 4. It tends to raise and maintain a high standard of education by making a license from a state with high requirements more widely acceptable for indorsement than one from a state of low requirements, and thus admits of early national application. 5. It requires legal evidence of individual merit as well as professional qualifications for approval for indorsement, and this tends to reduce to a minimum the indorsement of irregular, itinerant practitioners. 6. It puts a premium on character and education and renders the best practitioners eligible for indorsement in every state. 7. It indorses both the state and the individual candidate, and failure of a state to reciprocate, therefore, does not afford either a legal or valid reason for rejecting any of its licentiates who can meet every requirement of the statute. 8. It may accept any of the examined licentiates of a state for indorsement, or only those examined and licensed under the most recent requirements.

Resolved, That a state that will not indorse the examined licentiate of another state where the standards are co-equal, or of a state where the standards are higher, stands as a hindrance to medical progress, because: 1. It does not recognize the efficiency once proved by examination in a state of co-equal or higher requirements. 2. It limits the working sphere of the profession. 3. It exacts the same requirements for license from the physician, duly licensed after an examination in a co-equal state and experienced by years of practice, that are exacted from the inexperienced graduate.

Resolved, That indorsement, therefore, irrespective of reciprocity, should be granted to examined licentiates of states whose standard of requirements is co-equal or higher, when the candidate for indorsement can meet in all respects the requirements of the statute governing the practice of medicine.

THE UNCONSTITUTIONALITY OF INDORSEMENT.

SAULT STE. MARIE, MICH., Aug. 1, 1904.

To the Editor:—The resolutions submitted by Dr. Godfrey, at the meeting of the National Confederation of State Medical Examining and Licensing Medical Boards, were promptly tabled by the confederation, but, unfortunately for the cause of reciprocity, were ordered printed and distributed, with the possible effect of again clouding the reciprocal atmosphere (I see that the *New York Medical Journal* indorsed them, June 18) in an attempt to solve a simple problem by a method which is clearly unconstitutional and impracticable, and which lacks even the merit of an ordinary knowledge or understanding of the present status of medical reciprocity in the several political divisions of the United States. These resolutions ignore, altogether, the fact that over a dozen of the better states are at the present time exchanging licenses through reciprocity agreements on a perfectly satisfactory and practical basis, and that any one or all of such reciprocating states, through actual experience, can testify to the incorrectness of the conclusions and deductions recorded in the resolutions mentioned.

These resolutions are based on the fundamental principle that interstate reciprocity and interstate indorsement are only practical and of value when applied to those practitioners who obtained their licenses on the basis of an examination before a state board of medical examiners. As this class of practitioners represents less than 10 per cent. of the reputable physicians in the United States, and include only those of recent graduation, the expressions used in the resolutions, i. e., "hardship to the profession," "refuses recognition to distinguished physicians," "placing all licentiates on the same footing," etc., seem ludicrous and ironical in the extreme. I would ask in all seriousness, how many of the eminent practitioners of this country have obtained their state licenses on the basis of an examination before a state medical board?

Several of the state medical boards, including that of New Jersey, are committed to the policy of recognizing for interstate exchange certificates of registration or licenses obtained solely on the basis of an examination on stated subjects before state medical boards. It may be of interest to these boards to learn that any scheme of medical reciprocity which includes only licentiates who obtained their medical licenses on the basis of a state board examination, and which excludes licentiates who obtained their medical licenses on the basis of a college diploma, is unconstitutional, and unquestionably would be held so by any one of the several state supreme courts or the United States Supreme Court, for the following reasons:

1. State legislatures have authority to make reasonable provision for determining the qualifications of those engaged in the practice of medicine, and in connection therewith to create a tribunal, whether called a court or a board of registration, to administer such provisions.

2. State legislatures have up to a certain date provided as a qualification for registration or license subsequent to the passage of medical acts, a single examination of a certain grade, either by a state board of medical examiners or by a faculty of a medical college recognized by a board of medical registration and examination in lieu of such examination. More recent legislation in many states provides, however, for a double examination for license—one by a recognized faculty, and one by a medical board.

3. Up to the date of a double examination requirement by a state board, the legal status of a college faculty examination fully equals that of a state board examination.

4. It is, therefore, illegal and unconstitutional for a medical board to recognize as a qualification for license a state board examination and refuse recognition as a qualification for license a recognized medical college faculty examination up to the date when the law required the double examination qualification.

5. It is not legally competent for a medical board whose state law provides for medical reciprocity to adopt, even silently and without resolution, the policy of non-medical reciprocity. The law presumes proper action by the board in all its provisions, and boards could be compelled, through mandamus proceedings, to administer rightly a reciprocity provision equal to that of an examination provision.

The legal point in the matter centers on the examination qualification as a requirement for license, and the fact that two kinds of examinations are equally recognized in law up to the date of a double examination requirement. In order to understand the legal point involved, it is necessary to separate the *fact* from the *form*, the latter representing the diploma from the college and the certificate from the board, and the former representing the examination by which the diploma or certificate was obtained. The form is of very minor importance and is useful only for identification purposes, but the fact (the examination) contained in the diploma or certificate is the material substance affected by reciprocity.

The American Confederation of Reciprocating Examining and Licensing Medical Boards formulated the following qualifications in May, 1902, which are in harmony with the legal points raised above, and its members (fourteen in number) are exchanging licenses on the basis of these qualifications.

ARTICLE II.

The object of this confederation shall be to establish reciprocal relations between the medical examining and licensing boards of the states, territories, districts and provinces of the United States, the purpose of which being that thoroughly worthy and well-qualified physicians and surgeons, who have been legally authorized to practice under the laws of one of said states, territories, districts or provinces, may be given legal authority and be admitted to practice in any state, territory, district or province, represented in this confederation, without a repetition of the tests of qualification to which such practitioner has submitted.

QUALIFICATION 1.

A certificate of registration showing that an examination has been made by the proper board of any state, on which an average grade of not less than 75 per cent. was awarded, the holder thereof having been at the time of said examination the legal possessor of a diploma from a medical college in good standing in the state where reciprocal registration is sought, may be accepted, in lieu of examination, as evidence of qualification: provided that in case the scope of said examination was less than that prescribed by the state in which registration is sought, the applicant may be required to submit to a supplemental examination by the board thereof in such subjects as have not been covered.

QUALIFICATION 2.

A certificate of registration or license issued by the proper board of any state may be accepted as evidence of qualification for reciprocal registration in any other state: provided that the holder of such certificate had been engaged in the reputable practice of medicine in such state at least one year; and also provided, that the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college in good standing in the state in which reciprocal registration is sought, and that the date of such diploma was prior to the legal requirement of the legal examination test in such state.

Dr. Godfrey's resolutions make much of inequality of state requirements and the difficulties to be met in adjusting them, and advocates indorsement in lieu of reciprocity as a remedy. Qualification 1, as quoted, provides the only legal, equitable and practical methods, viz., the supplemental examination.

Under the provisions of Qualification 1 it matters not if the requirements of one state are very much higher than those of the other state. The inequality can be adjusted equitably in every case without inflicting any hardship on the applicant, and at any time, and it allows for the raising of standards in states at such times and under such circumstances as made necessary by local conditions. This qualification eliminates completely a "repetition of the tests of qualification" to which a practitioner has submitted, and this "repetition of the tests of qualification" is the sole reason given for reciprocity. No reputable or worthy practitioner can possibly object to fulfilling qualifications which he has not previously fulfilled.

Qualification 2 applies to those reputable practitioners who obtained their state licenses on the basis of a faculty examination (college diploma) previous to the date of the double examination requirements (college diploma and state certificate) in states. Under this qualification no state is required to accept an applicant whose diploma dates subsequent to the date of the double examination test in such state. In other words, the applicant, if he had applied for registration in such state at the time of his graduation, would have been accepted. Therefore, the state, under Qualification 2, dates back the application. The applicant, in addition to a standard qualification recognized as such at the date of issue, at this time also possesses several years of practical experience, which is in itself a legal qualification asset, and has, further, been investigated and recommended by the state in which his professional work has been done.

Could any provision for reciprocity be fairer, more equitable, more consistent with constitutional as well as statutory law—broad, and yet conservative, insisting on an exact legal qualification at the date of registration, than Qualification 2? It includes fully 75 per cent. of those practitioners to whom the benefits of practical reciprocity apply. Reciprocal legislation, which provides only for the present and future practitioner and ignores the older and experienced practitioner for the reason that the latter has not obtained his license through a state board examination, is not only irrelevant and unjust, but is also unconstitutional. The only practitioners excluded from medical reciprocity under Qualifications 1 and 2, in addition to practitioners not indorsed by state boards as moral and reputable, are those practitioners who obtained their licenses through a re-registration clause on the qualification of "years of practice" and those graduates of reputable colleges who registered under an exemption clause which permits graduates of colleges in the state responsible for the act to register without examination subsequent to the time of the double examination requirement in such state, and where all graduates from without the state are required to take the double examination requirement.

The above practitioners represent about 10 per cent. of the total practitioners of the United States and are not legally entitled to consideration; furthermore, such exemptions are unconstitutional and probably will be declared so in the near future by competent authority, and those practitioners who obtained their licenses through such exemption will face the possibility of being summoned before boards to show cause why their certificates should not be cancelled from the fact that they have been issued through error.

No attempt has been made, as far as I am aware, to criticise adversely Qualifications 1 or 2. The fact that they have been endorsed and made active by several of the leading states is sufficient reason for their being considered seriously, and objected to if they do not fulfill exactly the purposes which created them. It is strange and unexplainable that in the matter of medical reciprocity eastern state medical boards are not only inactive and unprogressive, but fail to appreciate and to accept the practical results which have set aside all their objections against reciprocity.

A meeting of the American Confederation will be held at St. Louis the last Wednesday in October, and it is to be hoped that the majority of eastern boards will demonstrate their reciprocity consistency by sending fully accredited delegates with power to act to this meeting.

B. D. HARISON,
Secretary American Confederation of Reciprocating Examining and Licensing Medical Boards, and Secretary Michigan State Board of Registration in Medicine.

List of Tuberculosis Hospitals.

NEW YORK CITY, Aug. 1, 1904.

To the Editor:—The National Association for the Study and Prevention of Tuberculosis, in co-operation with the Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York City, is preparing a directory of the various agencies existing and projected, in the United States and Canada, which care for persons suffering from any form of tuberculosis or which work in any way for its restriction.

This directory will include information in regard to hospitals, sanatoria, dispensaries and camps especially designed for tuberculous patients or with especial provision for them, whether public or private; insane hospitals and prisons in which special provision is made for the tuberculous inmates; state commissions and private societies formed for the purpose of investigation or of diffusing information; and a summary of the effort being made by the boards of health in the principal cities.

A tentative list of institutions is given below. It is desired to make this directory as complete and as accurate as possible. Any additional addresses, therefore, or any reasons why institutions that are included should be omitted, will be welcomed. Information about any institution will be considered confidential, if so desired. Communications should be addressed:

Committee on the Prevention of Tuberculosis,
105 E. 22d Street, New York City.

TUBERCULOSIS HOSPITALS AND SANATORIA.

ARIZONA.

Phoenix: Mercy Hospital.
Tucson: St. Mary's Sanatorium.

CALIFORNIA.

Altadena: Esperanza.
Indio: Health Camp.
Los Angeles: Barlow Sanatorium.
Monrovia: Pottenger Sanatorium for Diseases of Lungs and Throat.

COLORADO.

Colorado Springs: Glockner Sanitarium, Nordrach Ranch.
Denver: Agnes Memorial Sanatorium, The Association Health Farm, The Home, National Jewish Hospital for Consumptives.
Morrison: Resthaven.

CONNECTICUT.

New Canaan: Dr. Brooks' Sanatorium.
Wallingford: Gaylord Farm Sanatorium.

ILLINOIS.

Chicago: St. Anne's Sanitarium, Cook County Hospital for Consumptives.

INDIANA.

Fort Wayne: St. Rochus Hospital.
Indianapolis: Flower Mission Pavilion for Incurables.

IOWA.

Fort Dodge: Boulder Lodge Sanatorium.

LOUISIANA.

Covington: Ozonia Rest Cure.

MAINE.

Hebron: Oxford Sanatorium.

MARYLAND.

Baltimore: City Hospital for Consumptives.
Towson: Hospital for Consumptives of Maryland.

MASSACHUSETTS.

Boston: Boston Almshouse and Hospital.
Long Island: Channing Home, Free Home for Consumptives, The House of the Good Samaritan.
Cambridge: The Holy Ghost Hospital for Incurables.
East Bridgewater: The Millet Sanatorium.
Boston Highlands: Cullis Consumptives' Home, Grove Hall.
Rutland: Massachusetts State Sanatorium, Rutland Cottages.
Sharon: Sharon Sanatorium.
Tewkesbury: State Hospital.

MICHIGAN.

Eloise: Wayne County Hospital.

MINNESOTA.

St. Paul: Luther Hospital Sanatorium.
Walker, Cass County: State Sanatorium for Consumptives.

MISSOURI.

St. Louis: Emergency City Hospital No. 2, Mount St. Rose Sanatorium.

NEBRASKA.

Lincoln: Green Gables.

NEW HAMPSHIRE.

Suncook: Pembroke Sanatorium for Tuberculosis.

NEW JERSEY.

Glen Gardner: State Sanatorium for Tuberculous Diseases.
Orange: Memorial Hospital.

NEW MEXICO.

Albuquerque: St. Joseph Sanitarium.
Bayard: United States General Hospital.
Capitan: Public Health and Marine-Hospital Service Sanatorium.
East Las Vegas: St. Anthony's Sanatorium.
Santa Fé: St. Vincent's Sanitarium.
Silver City: St. Joseph's Sanatorium.

NEW YORK.

Bedford Station: Montefiore Country Sanitarium.
Buffalo: Erie County Hospital for Consumptives.
Coney Island: Seaside Camp for Tuberculous Children.
Lake Kushaqua: Stony Wold Sanatorium.
Liberty: The Edgemont, Loomis Sanatorium.
New York City: Brooklyn Home for Consumptives, Kings County Hospital, Home for Incurables, House of Rest for Consumptives, Lincoln Hospital, Montefiore Home for Chronic Invalids, Riverside Sanatorium for Pulmonary Diseases, St. Joseph's Hospital for Consumptives, Seton Hospital, Tuberculosis Infirmary of the Metropolitan Hospital.
Paul Smiths: Sanitarium Gabriels.
Ray Brook: State Hospital for the Treatment of Incipient Pulmonary Tuberculosis.
Santa Clara: Hill Crest and Uplands.
Saranac Lake: Adirondack Cottage Sanitarium, Raymond Cottage, Reception Cottage, Rumanapp Cottage.
Verbank: All Saints' Home, Priory Farms.
Yonkers: County Hospital.

NORTH CAROLINA.

Asheville: Dr. Stevens' Home, Winyah Sanitarium.
Black Mountain: Franklin Humanitarian Home.
Southern Pines: Pineshire Sanitarium for Diseases of the Lungs and Throat, Southern Pines Sanitarium.

OHIO.

Cincinnati: Branch Hospital for Consumptives.
Cleveland: Tuberculosis Sanatorium of the City Hospital.
Dayton: Miami Valley Hospital.

PENNSYLVANIA.

Chestnut Hill: Hospital for Diseases of the Lungs.
Lansford: Switch Back Sanatorium.
Mont Alto: South Mountain Camp Sanatorium.
Perkiomenville: Bide-Awhile Sanatorium.
Philadelphia: The Henry Phipps Institute, The House of Mercy, Lucien Moss Home, Jewish Hospital, Philadelphia Hospital, Rush Hospital.
Scranton: Lakewood Sanatorium, West Mountain Sanatorium.
White Haven: Free Hospital for Poor Consumptives, Sunny Rest Sanatorium.

RHODE ISLAND.

Burrillville: State Sanatorium.
Foster: Pine Ridge Camp for Consumptives.
Providence: St. Joseph's Hospital.

SOUTH CAROLINA.

Aiken: The Aiken Cottages.

TEXAS.

Comfort: Camp Reliance.
El Paso: Sisters' Hospital.

VERMONT.

South Hero: The Champlain Open-Air Sanitarium.

WASHINGTON.

Seattle: King County Hospital.

WISCONSIN.

Kilbourn: Wisconsin Dells Sanatorium.
Lake Nebagamon: Evergreen Park Cottage Sanatorium.
Tomahawk: The Wisconsin Health Park Association.

CANADA.

Kamloops, B. C.: Provincial Sanatorium.
Kentville, Nova Scotia: Provincial Sanatorium.
Gravenhurst, Ontario: Free Hospital for Consumptives. Muskoka Cottage Sanatorium.
Ste. Agathe des Monts, Quebec: Lahl Ghur.

SPECIAL CLINICS FOR THE TREATMENT OF TUBERCULOSIS.

Baltimore: Out-Patient Department, Johns Hopkins Hospital.
Boston: Boston Dispensary.
Chicago: Dispensaries of the Committee on the Prevention of Tuberculosis of the Visiting Nurse Association.
Minneapolis: Medical Department of Hamline University, University of Minnesota.
New Haven, Conn.: New Haven Dispensary.
New York: Clinic of the Department of Health for the Treatment of Pulmonary Diseases, Bellevue Hospital, out-patient department: Gouverneur Hospital dispensary, Post-Graduate Hospital dispensary, Vanderbilt Clinic, Presbyterian Hospital dispensary, Harlem Hospital dispensary.
Orange, N. J.: Orange Memorial Hospital.
Philadelphia: Henry Phipps Institute, Rush Hospital.
Providence, R. I.: Rhode Island Hospital.
Scranton, Pa.: Free Dispensary for Diseases of the Lungs.
Worcester, Mass.: City Hospital.

INSANE HOSPITALS WITH SPECIAL PROVISION FOR THE TUBERCULOUS PATIENTS.

DELAWARE.

Farnhurst: State Hospital for the Insane.

MISSISSIPPI.

Jackson: Hospital for Tuberculous Insane.

NEW YORK.

Binghamton: State Hospital.
Ward's Island, New York City: Manhattan State Hospital East.
Willard: Willard State Hospital.

RHODE ISLAND.

Howard: State Hospital.

VERMONT.

Waterbury: Vermont State Hospital.

SPECIAL PROVISION FOR TUBERCULOUS PRISONERS.

Frankfort, Ky.: Prison Hospital.
Stillwater, Minn.: State Prison.
Dannemora, N. Y.: Clinton Prison.
Columbia, S. C.: State Penitentiary.
Huntsville, Texas: Wynne Farm.

How to Take Notes on Lectures.

DENVER, Aug. 4, 1904.

To the Editor:—The note-book in the hands of the student comes down to us from the days when medical books were few and costly. In the Alumni Register of the University of Pennsylvania for June is the account of the expenses of a medical student of one hundred years ago. Among the items in this account we find: "Bell's Anatomy, $22;" "Chaptal's Chemistry, neatly bound, $5.75," and "Barton's Elements of Botany, $6.00."

But in this day, when almost every teacher has his own text-book or volume of published lectures, the student no longer needs to provide his medical library for future reference as he sits listening to lecture or clinic. The library so provided, judged by modern standards, is sure to be a very poor one. But although the note-books when finished may be worthless, a certain amount of advantage may be gained in the writing of them. When kept in the usual manner, however, this is more than balanced by the disadvantage of the interruption of thought and attention that comes from writing down the sentence which has been spoken, while the mind should be wholly given to the appreciation of what is then being said.

If note-books are to be kept they should be written outside of the lecture room. Briefly, the plan is to concentrate the whole attention on what the lecturer is saying, making a little special effort to notice the principal divisions or headings of his lecture and the order in which they are presented. Then, shortly after the lecture (at first it is best to do it immediately, and generally before sleeping) the notes are to be written up from memory. If the teacher makes a practice of summarizing each day, at the beginning of his lecture, the matters presented the day before, the student may compare this summary with his notes. But when the lecture of the day begins the notes should be laid entirely aside.

This plan has been tried often enough to demonstrate that it is perfectly practicable for any student who has sufficient intelligence and preliminary training to profit by the lecture he listens to. The note-books produced in this way will be found to contain quite as much of value as those that are immediately jotted down, except in the matter of formulas and statistics, which are much better left to the text-books. They will show a better selection of material, a better appreciation of relative importance, than is possible with the immediate jottings. But the most important result of the system is that more material and better selected material is left in the memory of the student. The systematic review of the lecture within a few hours after hearing it that this plan compels doubles the value of the instruction received.

Of course, a set of note-books so prepared, and the training incident to their production, cost some effort, but there is no direction in which the same mental effort can be expended with greater resulting benefit. More important than the mere training of memory is the practice in selective judgment of what is brought before the mind. This plan, carried out through the medical course, will enable one readily to report, in fair abstract, any paper or address listened to, or to gather and hold in mind the important points for future discussion. What has been said above does not, of course, apply to the note-book in the dissecting room or laboratory, where facts observed may be noted down, especially by means of diagrams and sketches, with the greatest benefit.

EDWARD JACKSON.

The Revival of Didactic Instruction.

MEMPHIS, TENN., July 25, 1904.

To the Editor:—The didactic lecture hall, the recitation room, the clinical amphitheater, the hospital wards and the laboratories should all be utilized to the fullest extent in teaching modern medicine. I regret to note the sentiment prevailing in some of our great schools against didactic work. No student can read unless he first learns his alphabet. Nor can he solve a problem in mathematics unless he knows his figures. He can not parse a sentence in English or solve a problem until he has been thoroughly grounded in the rules governing each case.

The didactic lecture is the alphabet, the unit one, the rules in teaching medicine. Let the didactic professor preach typhoid fever in the most forcible manner, then let the clinical professor teach typhoid fever in the hospital wards. I am a hearty champion of didactic work along with clinical. Medical schools to-day need more men like Pepper, DaCosta, Flint and Gross. We need men of culture; men of personality; men with powers of expression; men with clinical instinct; men who have acute observation as teachers. Politics is reigning supreme in many of our very best universities. In my opinion one of the oldest and greatest universities in this country is absolutely honey-combed with politics. Schools which are liberally endowed, and which should set the standard of medical education should in every sense eliminate politics forever. Let our schools, whether they are endowed or not, select their teachers with reference to their capacities and not according to their financial or family pull. No doubt there is too much technical work. Our pathologists and bacteriologists should adopt a better nomenclature. The terms now in vogue are harder to memorize and to remember than the muscles of the forearm in Gray's Anatomy. There is too much ornamentation of nonsensical terms, and not enough dress of good, plain English.

The recitation method is a good one and should be encouraged. It stimulates the student body to action and brings him in a more intimate touch with his teacher. A more cordial relationship should exist between student and professor.

FRANK JONES.

The Clinical Teaching Pendulum Has Swung Too Far.

PHILADELPHIA, July 29, 1904.

To the Editor:—My experience with students has convinced me that we have swung a little too far in the direction of clinical teaching; that at the present time we are giving them too few systematic ideas in regard to disease. The picture of disease as presented to them in a single clinical case may show but a few of the characteristic evidences of the malady, and may differ widely from the usual and ordinary. The student needs in the first place to acquire a thorough outline of the average case; after that he can apply with greater advantage his knowledge to the individual. The clinical lecturer as a rule lays especial emphasis on the symptoms of the case before him, which may be very misleading, or at least, imperfect.

DE FOREST WILLARD.

Queries and Minor Notes.

UNINTENTIONAL TRESPASS.

———, TEXAS, Aug. 2, 1904.

To the Editor:—Dr. A was attending Mr. X, who had parenchymatous nephritis. The case was serious, and Dr. A called Dr. B in consultation, after which they advised Mr. X to spend the summer at some watering place, referring him to physicians there. While at the watering place he was treated by the physicians to whom he was referred. After a few weeks he returned home and continued the treatment recommended by the latter. He was suddenly taken with severe dyspnea, and sent for Dr. B at 2 o'clock in the morning. Dr. B went and was asked to continue in treatment of the case, as they could not now return to the watering place. Nothing was said about Dr. A. Dr. B was under the impression that Dr. A had relinquished the case when Mr. X went to the watering place, or he would never have taken it. Dr. A is now offended, and Dr. B wishes to know if he had committed an error in taking the case. He is very desirous to have the matter adjusted, as the mistake was not made from malice, but only from a wrong impression of the situation.

ENQUIRER.

ANSWER.—The conduct of physicians in such cases, according to the Code of Ethics, is to be based on the golden rule. This will lead to careful inquiry as to the rights of other physicians to avoid unintentional trespass, even though a patient may consider that for him to summon a new attendant is *ipso facto* a discharge of the old. The physician can not always consider it so. When one makes an error or offends a confrère in the way described, one should frankly explain and apologize, and even give up the case if the patient agrees, because the loss of a patient from one's clientele is a small matter compared with the loss of professional fellowship and good feeling toward a confrère. For the same reason the physician represented in this case by Dr. A should exercise charity and heartily accept an apology when offered. If he knows his friend to be an honorable physician, let him think that he lost the case through his own inferiority rather than through any dishonorable action on the part of his friend.

THE LIMITATIONS OF GRATUITOUS SERVICES TO PHYSICIANS' DEPENDANTS.

———, ———, Aug. 5, 1904.

To the Editor:—Will you kindly reply to the following query through THE JOURNAL? A student, the son of a homeopathic physician of a distant town, and a complete stranger to me, contracted chancroids while attending school some distance from here. He consulted me and was treated for several weeks. The severity of the case and the development of chancroidal bubo necessitated several time-consuming visits and surgical treatment. An anxious impersonal letter to the attending physician was replied to by me, stating the boy's exact condition, and that he would be carefully looked after. No reply to this was received. The young man was emphatic in his statements that all would be paid for, and, indeed, a small part was paid. The bill was sent to him several times, and several months ago to the father, without response. Now, what is the proper and respectful course for me to pursue? Surely no self-respecting physician would expect another to do that kind of business for his erring son for nothing.

Y.

ANSWER.—The Principles of Ethics advise all physicians to render gratuitous service to any other "practicing physician and his immediate family dependants." In addition, it is suggested that an obligation lies on a physician in comfortable circumstances to recompense a colleague for professional service requiring sacrifice of considerable time. In the case submitted, it is perfectly clear that the homeopathic physician is under real obligation to our correspondent and should be ready to recompense him in suitable amount—something less than ordinary charge in similar cases in that locality. As to the proper course for our correspondent now to pursue, we can hardly advise; that is so largely a matter of personal taste and inclination, and of opportunity. Certainly it would not quite be wise to risk loss of prestige by publicly pressing such a claim, however aggravated the circumstances might be.

SLOW PULSE IN TYPHOID.

EDMOND, OKLA., July 27, 1904.

To the Editor:—Will you please explain the cause of slow pulse frequently found in typhoid fever? I have seen three or four cases during the last year with pulse ranging from 40 to 70 or 80, with a temperature of 101 to 103. Text-books speak of the slow pulse, but do not give its cause. Do you suppose the typhoid toxin influences the pneumogastric nerve to the production of this condition?

T. H. FLESHER, M.D.

ANSWER.—Your observation of the slow pulse in typhoid fever is, as you say, a confirmation of the statement made in many text-books. But it is well to emphasize the value of the slow pulse in spite of high fever, because in many books no mention of the fact is made, and too often the practitioner overlooks what is really a valuable help in the matter of diagnosis and prognosis. As is well known, too, the pulse of the *convalescent* typhoid is apt to be slow. While this slow pulse is probably commoner after typhoid than after other febrile diseases, it is seen after other infections, and is an example of the post-febrile bradycardia, or bradycardia of convalescence of Huchard and others. The explanation of this phenomenon is largely a matter of speculation. It may be, as suggested, due to an involvement of the vagus nerve or its center, but it is more likely, we think, due to the action of the toxin on the heart muscle itself. Many of the so-called neurotic affections of the heart are in reality myocardial in origin, and, while the influence of the pneumogastric and of the intrinsic cardiac nerve fibers and ganglia can not be excluded, one would feel inclined to look on the bradycardia as in large measure due to the effect of the typhoid infection on the heart itself. That the heart muscle is affected in typhoid, sharing in the acute parenchymatous degeneration of the viscera, is well known; and cardiac weakness and instability of its muscular power is often shown during convalescence when a patient whose pulse while in bed was perhaps only 50 or 60, has on first getting up a pulse of 100 or 120. In all this question there is an unknown element that is not explained, and that is, why the poison of typhoid generally causes a slow pulse, while that of some other disease, e. g., scarlet fever, causes a rapid pulse. We may speak of a selective action of these toxins as we do of drugs, and of their specific effect, yet there is still left much that is not quite clear.

REMOVAL OF SUPERFLUOUS HAIR.

———, GA., July 22, 1904.

To the Editor:—Is there a harmless prescription or means for the removal of superfluous hair—for instance, under the arms, or on the upper lip of a woman? S.

ANSWER.—Permanent removal of moderate hair growth on women's faces can be effected by electrolysis. The operation is permanent in its effects, but as each hair must be treated individually it is only practicable in cases in which the hairs are coarse and not too numerous. The object of the electrolytic operation is to destroy the papilla and lower part of the follicle. For this purpose are required a galvanic battery of 10 to 30 cells, an extremely fine needle, needle holder, an electrode, a rheostat, a milliamperemeter and the ordinary coils. The strength of current required is from ½ to 1½ milliamperes. The operation should be conducted with strict aseptic precautions. The *x*-rays have also been used in this class of cases, but with unsatisfactory results. One of the best depilatories (as suggested by Duhring) consists of from 2 to 4 drams of barium sulphid, with enough zinc oxid and starch to make an ounce. The sulphid should be well and freshly made and kept tightly corked; otherwise its action is unsatisfactory. At the time of application sufficient water is added to make a paste, which is thickly spread over the part and allowed to remain for from one to two minutes, and then scraped off, and a soothing ointment or dusting powder applied. The application is repeated every week or two, or as soon as the hair has reappeared.

PHYSICIANS' CARDS IN NEWSPAPERS.

———, ILL., July 21, 1904.

To the Editor:—Would the following card be unethical in a newspaper in a small town where one is beginning a practice?

OFFICE HOURS:
8 to 10 a. m.; 1 to 3 p. m.; 6:30 to 7:30 p. m.
JOHN R. DOE,
Physician and Surgeon,
Corner of Vine and Cherry streets, Corn, Ill.
Special attention given to microscopic and chemical analysis.
W.

ANSWER.—The question raised is one of expediency rather than of ethics. Publishing a simple professional card, giving name, address and office hours, is permissible, though in most parts of the country it is avoided as a matter of taste. Specifically, the card submitted appears rather pointless. The general public does not go to a physician for "microscopic and chemical analysis." In many places a young physician can pick up a little money doing this work for other and busier physicians. In seeking that patronage, however, one should call directly on the other physicians and solicit their favor, as they will not respond to a newspaper card. If, however, a physician advertises in the way mentioned with the idea of impressing the public with his superior methods of diagnosis, etc., the matter becomes objectionable.

———, IOWA, Aug. 4, 1904.

To the Editor:—When a physician puts his professional card in a daily or weekly paper, would there be any objection to his embodying in that card his place of graduation and hospital connections? The point came to my attention the other day, and I know that many physicians in good standing do so. H.

ANSWER.—While there is no rule against inserting college and hospital connections in a professional card published in a newspaper, there is, nevertheless, a very strong feeling in the profession that the inclusion of such data constitutes objectionable advertising. The man who thus parades his attainments may not in some places be ostracised professionally, but he certainly in most localities would be running very great risk of attracting strong professional disfavor. Our advice certainly is that it would be wiser to avoid such a practice.

DRY HOT-AIR APPARATUS.

BURR OAK, IND., July 21, 1904.

To the Editor:—Can you, or any of the medical fraternity, tell us how much value there is in the "dry hot-air apparatus" that is being so extensively advertised at the present time? Is there any good, reliable book on the subject? If so, what? Literature seems very deficient along this line, and, while a great deal of it seems to appeal to reason, we would like to know what is the prevalent opinion regarding it. E. W. REEVES, M.D.

ANSWER.—The dry hot-air apparatus has a distinct field of usefulness in many of the chronic joint affections, particularly those of a so-called rheumatic nature. The cases should be selected with care. Arthritis deformans is reported as being particularly benefited. A number of reliable articles have appeared from time to time in the literature. (For example, see THE JOURNAL, July 4, 1903, p. 69, ¶146.) A good work on the subject is that by Skinner (price $2), obtainable through any large book firm.

Marriages.

RAY ASH, M.D., to Miss Gail Arnold, both of Ashland, Ohio, July 26.

CHARLES K. CLARKE, M.D., to Miss Teresa Gallagher, both of Kingston, Ont.

GERALD B. WEBB, M.D., to Miss Varina Davis Hayes, both of Colorado Springs, Colo.

HARRY WAYBLE, M.D., Cincinnati, to Miss Anna Brothers of Newport, Ky., July 25.

J. E. SCHEIN, M.D., to Miss Laura M. Phillipson, both of Oshkosh, Wis., July 27.

EUGENE H. BULLOCK, M.D., to Miss Beulah De Vorss, both of St. Joseph, Mo., July 25.

LOUIS S. WALTON, M.D., to Miss Angeline McCray, both of Pittsburg, Pa., August 2.

CLAYTON B. CONWELL, M.D., Cincinnati, to Miss Sarah W. Jones of Riverside, Ohio.

FRANCIS E. SHINE, M.D., Bisbee, Ariz., to Miss Barker of Toronto, Ont., August 2.

ROBERT M. RANKIN, M.D., Covington, Ky., to Miss Delia Johnson of Barboursville, Ky., July 24.

J. SAMUEL SHAFFER, M.D., to Miss Christobel Ort, both of Montgomery, W. Va., August 2.

ISIDOR CLARENCE SMULLYAN, M.D., to Miss Sarah Wilensky, both of Atlanta, Ga., August 2.

ARTHUR FIELD LINDLEY, M.D., New York City, to Miss Elinor Levering, at Baltimore, July 30, 1904.

EDWARD LOGAN MONROE, M.D., to Miss Grace Cecilia Underhill, both of Jacksonville, Fla., August 3.

ANTON H. VORWERK, M.D., Burlington, Iowa, to Miss Katherine Winkle of Bancroft, Iowa, July 27.

MAX G. SCHLAPP, M.D., New York City, to Mrs. Grovene Vail Converse, in London, England, July 30.

CHESLEY LANIER CARTER, M.D., to Miss Mabel Moon, both of Chatham, Va., at Washington, D.C., July 25.

JULIUS M. PURNELL, M.D., acting assistant-surgeon, U. S. Army, to Miss Edith Terry of Louisville, Ky., August 4.

Deaths.

Edward H. Hill, M.D. Harvard University Medical School, Boston, 1867, founder of the Central Maine General Hospital Association; formerly president of the Maine Medical Association; for several years president of the Androscoggin County Medical Society, died at his home in Lewiston, July 17, after an illness of several years from spinal disease, aged 60.

John Turnbull, M.D. Jefferson Medical College, Philadelphia, 1863, of Bellbrook, Ohio, assistant surgeon to the Sixty-fifth Ohio Volunteer Infantry, and later surgeon to the One Hundred and Fifth Ohio Volunteer Infantry, died at St. Elizabeth's Hospital, Xenia, Ohio, July 19, five days after an operation for the removal of gallstones, aged 64.

John Cooper, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1857, surgeon in the Army, as a prisoner-of-war in New Orleans, and after his exchange, in connection with the Seventeenth Army Corps, died at his home in Buffalo, N. Y., July 11, from paralysis, aged 71.

William H. Hanscom, M.D. College of Medicine and Surgery of the University of Minnesota, Minneapolis, 1889, for 10 years medical inspector for the Department of Health of Minneapolis, died at his home in South Minneapolis, July 16, from dropsy, after an illness of five months, aged 37.

James W. Wilson, M.D. Jefferson Medical College, Philadelphia, 1837, some-time president of the Sandusky County Medical Society, and a member of the Ohio State Medical Society, who retired from active practice in 1858, died at his home in Fremont, Ohio, July 21, aged 88.

Charles Fletcher Sumner, M.D. College of Physicians of the Western District of New York, Fairfield, 1840, twice a member of the General Assembly; medical examiner of Bolton, Conn., and for 62 years a practitioner of that place, died at his home, July 12, from pneumonia, aged 87.

Ernest A. Taylor, M.D. Missouri Medical College, St. Louis, 1865; surgeon to the Seventh Missouri Cavalry in the Civil War; for five terms coroner of Rena County, Kan., died at his home in Hutchinson, July 20, after a short illness, aged 70.

John L. Mitchell, M.D. College of Physicians and Surgeons in the City of New York, 1845, a member of the Jackson County (Mich.) Medical Society for 25 years, died at his home in Jackson, July 10, after a prolonged illness, aged 81.

Helen W. Webster, M.D. New England Female Medical College, Boston, a nurse during the Civil War; for eight years resident physician at Vassar College, Poughkeepsie, N. Y., died at her home in New Bedford, Mass., July 19, aged 67.

D. F. McCrimmon, M.D. Atlanta (Ga.) Medical College of Rochelle, Ga., formerly representative from Wilcox County in the state legislature, died at the State Sanitarium, Milledgeville, July 15, after an illness of several months.

Henry D. Green, M.D. Medical Department of the University of the South, Sewanee, Tenn., 1900, of Atlanta, Ga., was struck by a car near the World's Fair, St. Louis, July 29, and died a few minutes later, aged 25.

Isidor H. Jacob, M.D. University of Würzburg, Germany, 1898, of New York City, one of the promoters of the Brooklyn Jewish Hospital, died in the German Hospital, New York City, July 18, after a prolonged illness.

Columbus N. Warren, M.D. Starling Medical College, Columbus, Ohio, 1889, of Harrietsville, Ohio, died suddenly while making a professional call near that place, from angina pectoris, July 26, aged 38.

Otis H. Johnson, M.D. Harvard University Medical School, Boston, 1866, of Haverhill, Mass., died at the Hale Hospital in that city, July 16, from diabetic gangrene, after amputation of the right leg, aged 63.

Gresham P. Williams, M.D. Hospital College of Medicine, Louisville, Ky., 1891; Medical College of Ohio, Cincinnati, 1867, died at his home in Huntingburg, Ind., July 12, after a short illness, aged 60.

Robert Macdonald Kippen, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1900, died recently and was buried from the residence of his father in London, Ont., July 18.

A. Clarence Bartlett, M.D. Medical College of Ohio, Cincinnati, 1880, died at his home in New Castle, Ind., July 10, from cancer of the intestines after an illness of two years, aged 47.

State Boards of Registration.

Other Reports.—This issue of THE JOURNAL has room for but a few reports of state boards. Similar reports appear from week to week. In the last issue, August 6, reports were given from the states of Delaware, Illinois, Massachusetts, Michigan, Minnesota, North Dakota, Ohio, South Carolina and Texas. The last-mentioned report included the 125 questions asked on 13 subjects.

Rhode Island July Report.—Dr. G. T. Swartz, secretary of the Rhode Island State Board of Health, reports written examination held at Providence, July 7 and 8, 1904. The number of subjects examined in was 7; total questions asked, 70, and percentage required to pass, 75. The total number examined was 28, of whom 25 passed and 3 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Baltimore Medical College	(1904)	83.8, 79.3
Boston University Medical School	(1904)	80.1, 82.0
College of Phys. and Surgs., Baltimore	(1904)	87.4, 85, 84.3, 86.5
College of Phys. and Surgs., Boston	(1904)	75.* 79.1
College of Phys. and Surgs., New York	(1904)	90.4, 88.9
Harvard University Medical School	(1902) 90, (1903) 85.3, (1904) 85.9, 83.2.	
Jefferson Medical College	(1904)	78.6, 83, 86.4, 82.7
Tufts College Medical School	(1904)	77.4, 77.0
University of Maryland	(1904)	89.1
University Medical College, New York	(1895)	87.2
Yale University Medical School	(1902)	85.2
FAILED.		
Baltimore University Medical School	(1904)	60.4
Georgetown University	(1889)	62.0
Maryland Medical College	(1904)	65.9

*Second examination.

New Mexico June Report.—Dr. B. D. Black, secretary of the New Mexico Board of Health, reports the written examination held at Santa Fe, June 6, 1904. The number of subjects examined in was 7; total questions asked 59, and percentage required to pass, 65 per cent. The total number examined was 9, of whom 7 passed and 2 failed. The following colleges were represented:

PASSED College.	Year Grad.	Per Cent.
Detroit College of Medicine	(1897)	65.4
Physicians and Surgeons, Keokuk, Iowa	(1896)	81.0
Birmingham Medical College	(1898)	95.5
Med. Dept. Fort Worth University	(1898)	72.5
Kentucky University	(1904)	79.5
Colorado University	(1899)	72.8
American Medical Missionary College	(1903)	84.0
FAILED.		
National Medical University, Chicago	(1903)	62.1
Vanderbilt University	(1890)	61.4

Twenty candidates were licensed by registration of diplomas from colleges in good standing and two were rejected for unprofessional conduct.

Maine July Report.—Dr. A. K. P. Meserve, secretary of the Maine Board of Registration of Medicine, reports the oral and written examination held at Portland, July 12 and 13, 1904. The number of subjects examined in was 10; total questions asked, 100, and average percentage required to pass, 75, and not below 60 in any one branch. The total number examined was 49, of whom 41 passed and 8 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Baltimore Medical College	(1904)	90.8
Baltimore Univ. School of Med.	(1899) 77.3, (1904)	89.3
Boston Univ. School of Med.	(1904) 88.0,	83.0
Coll. of Phys and Surgs., Boston	(1904) 85.3, 88.3, (1897)	77.8
Hahnemann Med. Coll. Hospital, Philadelphia	(1904)	87.4
Harvard Medical School	(1896) 83.8, (1901) 91.4, (1902) 88.5, (1903) 83.5.	
Johns Hopkins Medical School	(1904)	96.3
Laval University, Montreal	(1904)	82.0
Maryland Medical College	(1904) 82.1,	83.0
Medical School of Maine	(1890) 78, (1904) the grade of 75.2 was reached by one, 77 by one, 79 by two, 81 by two, 82 by two, 83 by one, 86 by one, 87 by two, 88.1 by one, 89.3 by one, 90.7 by one, 92.7 by one.	
Syracuse Medical College	(1904)	84.8
Tufts College Medical School	(1903) 88.7, (1902)	80.0
University of Pennsylvania	(1888)	87.8
University of Vermont	(1904) 88.5, 86.7,	86.7
FAILED.		
College of Phys. and Surgs., Boston	(1904) 81.5 (56 in mat. med.).	
College of Phys. and Surgs., Baltimore	(1904) 80.8 (56 in path.), (1903) 74.1.	
Medical School of Maine	(1904) 81.8 (58.5 in path.), 73.5, 76.8 (50 in obstet.), 72.5, 67.5.	

The average of the 16 representatives of the Medical School of Maine who passed was 83.7, of the total 21, 81.5.

Nebraska June Report.—Dr. G. H. Brash, secretary of the Nebraska State Board of Health, reports the written examination held at Omaha, June 1 and 2, 1904. The number of subjects examined in was 8; the total questions asked, 80, and the percentage required to pass, 75. The number examined was 63, of whom 61 passed and 2 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Lincoln Medical College	(1904)	78.4, 79.2, 82.6
College of Physicians and Surgeons, Chicago	(1904)	87.6, 90.8
Hering Medical College, Chicago	(1904)	76.2
Medico-Chirurgical College, Philadelphia	(1903)	77.6
Central Medical College, St. Joseph, Mo.	(1904)	83.7
Ensworth Medical College	(1904)	78.1
Creighton Medical College	(1902) 84.8, (1904) the grade of 75 was reached by one, 78 by two, 79 by two, 80 by one, 81 by three, 82 by two, 83 by three, 86 by two, 87 by four, 88 by two, 91 by one.	
Omaha Medical College	(1904)	90.7
Medical Department University of Nebraska	(1904) the grade of 76 was reached by three, 78 by two, 79 by one, 81 by two, 82 by one, 83 by one, 84 by one, 85 by two, 87 by two, 88 by six, 89 by two, 90 by two, 91 by one, 92 by one.	
FAILED.		
Creighton Medical College	(1900)	2.1
Omaha Medical College	(1901)	71.5

The general average for all representatives of Creighton Medical College who passed was 83.1, of the University of Nebraska, 84.7.

Association News.

NEW MEMBERS.

List of new members for the month of July, 1904:

ARKANSAS.

Worthington, J. A., Green Forest.
Rhine, T. E., Thornton.

CALIFORNIA.

Blumer, Geo., San Francisco.
Crothers, W. H., San Francisco.
Weeks, Alanson, San Francisco.
Bruguiere, Peder Sather, San Francisco.
Rhinehard, Jas. F., Oakland.
Soothill, John H., Anderson.
Bramhall, Robt. N., Fair Oaks.
Knowlton, J. J., San Luis Obispo.
English, Charles F., Sonora.
Flemming, B. F., San Francisco.
Franklin, W. S., San Francisco.

COLORADO.

Abbott, Ursa S., Grand Junction.
Arnold, Clarence R., Colorado Springs.

CONNECTICUT.

Chester, Thos. W., Hartford.
Beard, Theo. E., New Haven.
Sherrill, Geo., Stamford.
White, Robt. C., Willimantic.
Smith, N. P., Norwich.
Staub, Geo. E., New Milford.
Maloney, D. J., Waterbury.
Hammond, Henry L., Killingly.

GEORGIA.

Warfield, Luis M., Savannah.
Bloomfield, Jas. C., Athens.

IDAHO.

Brundage, M., Shelley.

ILLINOIS.

Applewhite, L. D., East St. Louis.
McNeill, Samuel J., Chicago.
Fisher, Frank C., Joliet.
Ramsey, Jas. W., Aledo.
Fuller, Spencer S., Paxton.
Gaston, M. Adelaide, Cerro Gordo.
Grayson, Oscar J., Granite.
Ward, S. R., Richmond.
Wall, A. S., Champaign.
Kober, A. F., McConnell.
Robbins, Wilfred D., Albany.
Elliott, Elihu N., Chicago.
Voigt, L. G., Freeport.
Buckmaster, F., Altamont.

INDIAN TERRITORY.

Plunkett, Benj. J., Duncan.
Parson, J. D., Marietta.
Tralle, Geo. M., Purcell.

INDIANA.

Lukenbill, Orestes C., Indianapolis.
Newcomb, John Ray, Indianapolis.
Lamberson, Harry M., Connersville.
Perry, C. H., Lewis Creek.
Wyatt, A. R., La Grange.
Ebv, Lorenzo D., Plymouth.
Wishard, E. E., Noblesville.
Kalbfleisch, A. H., Peru.
Kimmel, A. J., Hudson.

IOWA.

Anderson, Louis N., Cedar Falls.
Rudolf, F. Eugene, Davenport.
Gingles, W. W., Castana.
Skinner, F. S., Marion.
Kueny, Chas. F., Le Mars.
Letournean, P. H., Waukon.
Mirick, Willis A., Monticello.
Gorman, V. C., Anamosa.
Hubbard, Chester W., Atkins.
Renshaw, L. L., Monona.
Young, J. W., West Grove.
Harris, C. E., Grinnell.

KANSAS.

Ioel, R. L., Leavenworth.
Furst, Oliver J., Peabody.
Mitchell, Paul S., Iola.

KENTUCKY.

Lewis, H. H., Salt Lick.
Gholson, Wm. E., Kirbyton.
Bushong, Perry W., Summer Shade.
Keller, David H., Lexington.
South, Lilian H., Bowling Green.
Orsburn, H. K., Owensboro.

LOUISIANA.

Ohlo, Henry J., New Orleans.
White, Stuart L., Ruston.

MARYLAND.

Mitchell, Chas. W., Baltimore.
Lockard, G. Carroll, Baltimore.
Leutcher, John A., Baltimore.
Thiede, Gustav A., Baltimore.
Hynson, Henry P., Baltimore.
France, Joseph I., Baltimore.

MASSACHUSETTS.

Wadsworth, Richard G., Boston.
Kennedy, C. F. J., Springfield.
Smith, Frank H., Hadley.
Greenough, Clara M., Greenfield.

MEXICO.

Common, Ernest L., Minaca, Chihuahua.

MICHIGAN.

Locher, H. E., Grand Rapids.
Henry, J. G., Detroit.
Dibble, Wealthy, Saginaw.
Newcomb, Mary E., Blissfield.
Kee, David N., Gladstone.
Hebert, P., Iron Mountain.
Strangways, W. F., Traverse City.
Yonkers, F., Woodville.
Love, Frank S., West Branch.

MINNESOTA.

Armstrong, Louis W., Breckenridge.
Bratrud, T., Warren.

MISSISSIPPI.

Jones, Geo. Pierce, Lula.

MISSOURI.

Murphy, R. Brent, St. Louis.
Garne, R. L., Pollock.
Helton, Jas. W., Green City.
Kelly, S. G., Sedalia.

MONTANA.

Turner, Christopher, Butte.
Cole, Chas. K., Helena.
Horsky, Rudolph, Helena.
Barbour, Geo. H., Helena.

NEBRASKA.

Burkard, Adrian F., Omaha.
Spear, Geo. E., Lincoln.
Wilmoth, William L., Superior.

NEW HAMPSHIRE.

Sumner, Arthur F., Concord.
Osterhout, J. J., Marlow.

NEW JERSEY.

Wherry, E. G., Newark.

NEW YORK.

Howe, Lucien, Buffalo.
Sell, E. H. M., New York City.
Gow, Frank F., Schuylerville.
Palmer, Floyd, Fishkill-on-Hudson.
Rich, E. S., Kennedy.
Cooper, Wm. C., Troy.

OHIO.

Jackson, Thos. W., Akron.
Kahler, J. Frank, Canton.
Mithoefer, Wm., Cincinnati.
Fee, Frank E., Cincinnati.
Minor, H. C., Toronto.
Brattain, G. M., Antwerp.
Shane, Gustav A., Waynesburg.
Holmes, Ralph W., Gallipolis.
Ury, John Pushy, Defiance.
Williams, Berthold A., College Hill.
Elder, John M., Mineral Ridge.

OREGON.

Cottel, Willis I., Portland.

PENNSYLVANIA

Bridenbaugh, Chas. S., Altoona.
Watson, Chas. M., Allegheny.
Osterloh, Chas. T., Allegheny.
England, Joseph W., Philadelphia.
Finck, Edward B., Philadelphia.
Knowles, Geo. A., Philadelphia.
Goss, Chas., Philadelphia.
Burns, Wm. A., Philadelphia.
Cassidy, Paul B., Philadelphia.
Wilbart, M. I., Philadelphia.
Conard, T. E., Philadelphia.
Jamison, Hugh D., Pittsburg.
Anderson, Clyde O., Pittsburg.
Pool, Stewart N., Pittsburg.
Charles, Wm. S., Pittsburg.
Kellogg, Fred'k S., Pittsburg.
Barker, Olin G. A., Pittsburg.
Born, Chas. E., Johnstown.
Stern, Jac. C., York.
Smith, Chas. R., Tioga.
Graff, Matthew A., Sewickley.
Jennings, Samuel D., Sewickley.
Phillips, John W., Troy.
Weddell, E. P., Scottdale.
Laverty, Witt C., Middletown.
Beswick, Geo. L., Wilmerding.
Brooks, Macy, Philadelphia.
Rosenberger Randle C., Philadelphia.

RHODE ISLAND.

Sanford, A. C., Newport.

SOUTH DAKOTA.

Riggs, Theo. F., Oahe.
Bacon, Ralph F., Garden City.
Crawford, J. Harry, Castlewood.
Adams, Geo. S., Yankton.
Dustin, John F., Pukwana.

TEXAS.

Wehrle, Gottlieb, El Paso.
Barrell, C. C., Houston.
McIntosh, John A., San Antonio.
Rogers, Madison W., Alexander.
Mendenhall, Jas. N., Plano.
Reed, Guy H., Beaumont.
Sanders, D. I., Edom.
Stevens, G. W., Willis.
Powell, W. P., Willis.
McDaniel, H. A., Bonham.

UTAH.

Hazel, Thos. Harold, Salt Lake City.

WEST VIRGINIA

Davis, Gilman R., Stone Cliff.
Mankin, J. W., Thurmond.

WISCONSIN.

Teschan, R. C., Milwaukee.
Laidlow, W. R., Milwaukee.
Feilman, Geo. H., Milwaukee.
Hall, C. H., Madison.
De Lap, R. H., Richland Center.
Cleary, B. L., Edgerton.
Jacobs, E. C., Durand.
Hooper, E. S., Darlington.
Larsen, G. A., Blanchardville.
Banks, Wm. H., Roberts.

Medical Organization.

Georgia.

SUMTER COUNTY MEDICAL SOCIETY.—This society was organized at Americus, July 27, with an initial membership of 22, and the following officers: Dr. F. A. Thomas, Americus, president, and Dr. Frank L. Cato, Jr., De Soto, secretary.

Illinois.

PIATT COUNTY MEDICAL SOCIETY.—Under this title the physicians of Piatt County have recently organized.

ILLINOIS FIFTH DISTRICT MEDICAL SOCIETY.—At the one hundred and tenth quarterly meeting of the Brainard District Medical Society, held in Bloomington, Ill., July 28, Councilor Dr. J. Whitefield, South Bloomington, of the Fifth District, made an address on medical organization, and presented the standard plan. The society, by vote, re-organized in accordance with the plan. By the new districting, Morgan and Cass counties are transferred from the Fifth to the Sixth District.

Michigan.

MUSKEGON COUNTY MEDICAL SOCIETY.—This society, whose preliminary meeting for organization was reported in THE JOURNAL of July 30, page, 344, met July 15, perfected its organization on the standard plan, and elected the following officers: Dr. George S. Williams, president; Dr. Sigmund Block, vice-president; Dr. Emory L. Niskern, secretary, and Dr. Jacob. Oosting, treasurer, all of Muskegon.

UPPER PENINSULA MEDICAL SOCIETY OF THE TWELFTH DISTRICT.—At the tenth annual meeting of the Upper Peninsula Medical Society, held in Marquette, July 21 and 22, the society was reorganized on the standard plan, and the following officers were elected: Dr. Edward H. Flynn, Marquette, president; Dr. Elmer D. Gardner, Hancock, vice-president; and Dr. S. Edwin Cruse, Iron Mountain, secretary and treasurer. The next meeting will be held at Hancock.

Missouri.

BATES COUNTY MEDICAL SOCIETY.—This society was organized in Butler, July 1, by Dr. M. P. Overholzer, Harrisonville, with the following officers: President, Dr. Alva E. Lyle, Butler; vice-president, Dr. Edward G. Zey, Butler, and secretary and treasurer, Dr. Edward N. Chastain, Rich Hill.

New Jersey.

ITALIAN-AMERICAN MEDICAL SOCIETY OF ESSEX COUNTY.—On July 28 the Italian physicians of Essex County effected an organization with the following temporary officers: Dr. Joseph M. Malatesta, Newark, president, and Dr. C. C. Berardinelli, secretary.

Ohio.

MAHONING COUNTY MEDICAL SOCIETY.—About 20 physicians of the county met at Youngstown, July 19, and, with the aid of Dr. T. Clark Miller, Massillon, councilor for the Sixth District, reorganized this society on the standard plan. Election of officers was deferred until the January meeting.

South Carolina.

EDGEFIELD COUNTY MEDICAL ASSOCIATION.—This association was recently organized for Edgefield County with the following officers: President, Dr. J. Hammond Carmichael, Pleasant Lane; vice-president, Dr. J. M. Rushton, Johnston; secretary, Dr. J. G. Edwards, and treasurer, Dr. J. N. Crofton, Colliers.

Texas.

SOUTH TEXAS MEDICAL ASSOCIATION.—At the semi-annual meeting held in Houston, June 22 and 23, the following resolution, offered by Dr. Walter Shropshire, Yoakum, was adopted on motion of Dr. Robert W. KNOX, Houston:

WHEREAS, The successful organization of the whole medical profession of Texas, as contemplated by our state association and is now being prosecuted, is to some extent handicapped by the indiscriminate membership of the large district medical associations, be it

Resolved, That the membership of the South Texas Medical Association be restricted to members of societies that are chartered by and are branches of the Texas State Association. Further, that so soon as the state association so directs, this association will become one of its district associations to represent it in the South Texas or Ninth Councilor District, according to the plan of recent organization of the state medical association.

The following officers were then elected: Dr. John T. Moore, Galveston, president; Dr. Sofie Herzog, Brazoria, vice-president, and Dr. Edward J. Hamilton, Houston, secretary and treasurer.

MEDICAL SCHOOLS OF THE UNITED STATES

Below is given a brief description of every college in the United States that is legally chartered to confer the degree of doctor of medicine, and whose diploma is recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The information given is, as a rule, obtained from the catalogues and has been submitted to the dean of each school for his inspection and approval. Colleges which belong to the American or the Southern Medical College Association or other organization of colleges have requirements for admission of students according to the rules of these associations, unless their requirements are higher, in which case a statement is made to that effect. Extracts from these rules are given at the close of the list of colleges.

ALABAMA.

Alabama, population 1,828,697, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College, located in Mobile and in Birmingham. The population of each city is over 38,000 and board and room may be obtained for from $12 to $20 per month.

Mobile.

MEDICAL COLLEGE OF ALABAMA.—This is the Medical Department of the University of Alabama, organized in 1859. The City Hospital furnishes free clinical material. The faculty consists of 9 professors and 12 lecturers, 21 in all. It is well equipped with building, laboratories, dispensary, etc. It is a member of the Southern Medical College Association. The course of study covers four years of six months each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. George E. Ketchum. Total registration, 1903-4, 167; graduates, 38. The thirty-ninth session will begin Oct. 7, 1904, and will close April 1, 1905.

Birmingham.

BIRMINGHAM MEDICAL COLLEGE.—This school was incorporated in 1894 and is situated in Birmingham, a manufacturing town of 38,415. The clinical advantages are good. The Hillman, St. Vincent's, Pratt and County hospitals are accessible to the students. The laboratories are well equipped. There are 19 professors and 10 assistants, total 29. The school is a member of the Southern Medical College Association. The course of instruction embraces four separate sessions of six months each. The fees are $75 for each of the first three years and $105 for the fourth. The Dean Dr. B. L. Wyman. Registration, 1903-4, 104; graduates, 5. Next session opens Oct. 3, 1904, and closes April 1, 1905.

ARKANSAS.

Arkansas, population 1,311,564, has one medical college, located in Little Rock. Board and lodging costs from $13 to $18 per month.

Little Rock.

UNIVERSITY OF ARKANSAS MEDICAL DEPARTMENT.—This college is located at Little Rock, population about 60,000. It was organized in 1879 as the Arkansas Industrial University Medical Department. It is a charter member of the Association of American Medical Colleges. Hospital facilities are furnished by Logan H. Roots Memorial Hospital, St. Vincent's Infirmary and Pulaski County Hospital, the latter having a capacity of 200 beds. The teaching body consists of 15 professors and 20 lecturers and assistants, total 35. Dr. F. L. French, Little Rock, is Secretary. The fees are: Matriculation $5, paid but once; annual fees $60, and graduation $25. Total number of students at last session, 215; graduates, 19. The next course of lectures begins Oct. 17 1904, and ends April 15, 1905.

CALIFORNIA.

California, population 1,485,053, has eight medical colleges. Five are located in San Francisco, a city of about 400,000 inhabitants. They are Cooper Medical College, Medical Department of the University of California, California Medical College, Hahnemann Medical College of the Pacific, and the College of Physicians and Surgeons. The clinical facilities of San Francisco are good; board and lodging can be obtained for from $20 to $30 a month. The College of Medicine of the University of Southern California is situated in Los Angeles, population 102,479. Board and lodging can be obtained in that city for $4 a week and upward. The Oakland College of Medicine and Surgery is in Oakland, a suburb of San Francisco.

Oakland.

OAKLAND COLLEGE OF MEDICINE AND SURGERY.—The third session of this new school will begin Sept. 15, 1904, and end May 15, 1905. The Registrar is Dr. Edward N. Ewer. The faculty numbers 23. Tuition is about $115 yearly. There were eight students last session, divided between the first and second year classes. During this session there will be three classes only, no students being admitted to fourth-year studies.

San Francisco.

COOPER MEDICAL COLLEGE.—This school was organized in 1858, though its present name was not adopted until 1882. The faculty consists of 17 professors and 44 lecturers, instructors, etc., 61 in all. Lane Hospital, adjoining the college, the City and County Hospital, containing 464 beds, and the college dispensary furnish clinical material. The requirements for admission are a certificate showing that applicant has passed the regular examination for admission to the University of California, or its equivalent, or graduation from an accredited high school or academy, or its equivalent. The college itself does not hold entrance examinations. The college building supplies large laboratory and lecture-room facilities. The curriculum covers a graded course of four years of eight and a half months each. Fees: Matriculation, $5; course fee for each year, $150; laboratory fee for each year, $10; breakage deposit each year, $10; graduation fee, $25; no other charges. The Dean is Dr. Henry Gibbons, Jr. Total registration for 1903-4 was 193; graduates, 44. The next session opens Aug. 15, 1904, and will close May 9, 1905.

MEDICAL DEPARTMENT UNIVERSITY OF CALIFORNIA.—This department of the State University was organized in 1872, and has a faculty composed of 20 professors, 50 associates and assistants, a total of 70. The City and County Hospital, which admits students of this school not only to the clinics proper, but also to its wards for study, and the college dispensary furnish good clinical material. The course covers graded work for four years of nine months each. This school is a member of the Association of American Medical Colleges. In 1905 two full college years' work will be required of all applicants for admission. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean is Dr. Arnold A. D'Ancona. Total registration for 1903-4 was 113; graduates, 27. The thirty-second session opens Aug. 15, 1904, and will close May 15, 1905.

COLLEGE OF PHYSICIANS AND SURGEONS OF SAN FRANCISCO.—This school was organized in 1896 and has a faculty of 22 professors and 24 associate professors and teachers, a total of 46. The hospital facilities consist of the City and County Hospital, the California General Hospital, with 50 beds, and St. Winifred Hospital, with 50 beds. The daily clinics at the new college building furnish abundant material of every description. Applicants for matriculation must show an equal amount of work done or pass a satisfactory examination in English, history and government, geography, physics, mathematics and Latin, grammar and translation. The college building recently completed is well supplied with laboratories and lecture rooms. This college now conducts a continuous course of medical instruction. Each year is divided into four quarters of three months each, and known as the autumn, winter, spring and summer quarters. Students may enter at the beginning of any quarter. Attendance on 12 quarters will be required, and at least 45 months must elapse between the beginning of the first course and the time of graduation. Fees, $30 per quarter. The Dean is Dr. D. A. Hodghead. Registration for 1903-4 was 124; of these 29 graduated in medicine. The autumn quarter opens Sept. 1, 1904, and closes May, 1905.

CALIFORNIA MEDICAL COLLEGE.—Eclectic. This school was organized in 1878. Its faculty includes 18 professors and 17 lecturers and instructors, a total of 35. The clinical material is supplied by the Buena Vista and City and County hospitals. Applicants for admission not holding diploma or certificate are examined. The course has been extended to cover four years of eight months each. Total fees are about $110 for each of the first three years and $40 for the fourth year. The Dean is Dr. D. Maclean. Total registration for 1903-4 was 47; graduates, 8. The next session begins Oct. 3, 1904, and ends May 17, 1905.

HAHNEMANN MEDICAL COLLEGE OF THE PACIFIC.—Homeopathic. This school was organized in 1884, and has a faculty of 19 professors and 23 lecturers, instructors, etc., in all 42. The Pacific Homeopathic Polyclinic, the Homeopathic Sanatorium, the San Francisco Nursery for Homeless Children, Marie Kip Orphanage, accommodating, respectively, 45, 75 and 120 beds; Fabiola Hospital and the City and County Hospital, furnish the clinical material for study. Matriculants must possess the equivalent of a high school education. One year after entrance is permitted in which the student may complete conditions in Latin. The college is registered and accredited with New York State Regents. The course includes four years of seven months each. Total fees for the first year, $155, and $100 for each of the other three years. The Dean is Dr. James W. Ward. Total registration for 1903-4 is 34. The twenty-second session opened March 6, 1904, and will close Oct. 31, 1904.

Los Angeles.

COLLEGE OF MEDICINE, UNIVERSITY OF SOUTHERN CALIFORNIA.—This school was organized in 1885, and has a faculty of 27 professors and 12 instructors, etc., 39 in all. The County Hospital, having 200 beds, and a college dispensary furnish clinical material. Applicants for admission are required to pass an examination in English, arithmetic, elementary algebra, physics and Latin equal to one year's work, unless they can show by certificate that they have covered that ground. The building is amply provided with laboratories and lecture rooms and a new clinical laboratory, erected in 1904, costing, with equipment, $20,000. A graded course, covering four years of thirty-two weeks each, is offered. The total fees for the first year are $145; second and third, $150 each, and $40 for the fourth year. The Dean is Dr. Walter Lindley. Total registration for 1903-4 was 110; graduates, 24. The next session opens Oct. 13, 1904, and closes May 15, 1905.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school has just been organized, and its first session will open Oct. 6, 1904, and close June 6, 1905. The length of each course will be eight months. The faculty numbers 57 in all, 22 professors and 35 assistants. The Secretary is Dr. Benjamin F. Church, Trust Bldg., Los Angeles.

COLORADO.

Colorado, with a population of 539,700, has three medical colleges. Two of these, Denver and Gross College of Medicine and Denver Homeopathic College, are in Denver, which has a population of about 175,000, the other, the Colorado School of Medicine, is at Boulder (population 6,150). The clinical facilities in Denver available to the two colleges are the Arapahoe County Hospital, which has a capacity of 300 beds; St. Joseph's Hospital, with 300 beds, and St. Luke's Hospital, with 75 beds. The Public Library contains 10,000 volumes on medicine. Board can be obtained in Denver for $5 a week and upward.

Denver.

THE DENVER AND GROSS COLLEGE OF MEDICINE.—This is the Medical Department of the University of Denver, and was organized in 1902 by the union of the Gross Medical College (organized 1887) and the Denver College of Medicine (organized 1880). The clinical advantages are the college dispensary, the Arapahoe County Hospital, St. Luke's Hospital, St. Anthony's Hospital, St. Joseph's Hospital, National Jewish Hospital for Consumptives, Home for Dependent Children and the City Contagious Hospital and Mercy Sanitarium. The faculty is made up of 38 professors, 43 assistants and instructors, a total of 81. Its location is central, and the buildings are well arranged for laboratory, dispensary and didactic work. The course is graded and covers four years of eight months. The college is a member of the Association of American Medical Colleges. Final examinations at the end of each year are held. Fees for the first year are $115. For the second year, $116. Third year, $101. Fourth year, $126. Total registration, 1903-4, 127; graduates, 32. The twenty-third session will begin Sept. 13, 1904, and close May 18, 1905. The Dean is Dr. S. G. Bonney.

DENVER HOMEOPATHIC COLLEGE.—This college, organized in 1894, beside clinical privileges in the hospital of the city and county of Denver, has exclusive privileges for clinical work in the Denver Homeopathic Hospital, the Haven and the Belle Lenox Nursery. The faculty numbers 25 professors and 7 lecturers and instructors, 32 in all. The requirements for admission are, "possession of a diploma from a literary college, university, an academy, a normal or high school; a first-grade teacher's certificate, or a previous matriculation at some reputable literary or medical college." The course of study consists of four years of seven months each; monthly examinations are held in each subject. A five-year scholarship may be had for $300, payable in advance, otherwise the tuition is $100 a year for the first, second and third years. Senior year, $75. There is a matriculation fee of $5, payable once. The Dean is Dr. James P. Willard. Total registration for 1903-4 was 29; the number of graduates, 6. The eleventh session begins in September, 1904, and will close April, 1905.

Boulder.

COLORADO SCHOOL OF MEDICINE.—This is the Medical Department of the University of Colorado, and was opened in 1883. The University Hospital, under the control of the state, is equipped to accommodate 40 patients, and furnishes free clinical material. Both hospital and dispensary clinics are offered and the sanatorium located at Boulder offers additional advantages in this line. The faculty embraces 15 professors and 12 lecturers and assistants, a total of 27. The laboratories are well equipped and commodious. A separate building is devoted to the study of anatomy and another one is used for medical work exclusively. A complete four-year course of study in a recognized high school, or its equivalent, is required for admission. This school is a member of the Association of American Medical Colleges. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. Luman M. Giffin. Total registration for 1903-4 was 53; graduates, 17. The twenty-third session begins Sept. 12, 1904, and closes June 7, 1905.

CONNECTICUT.

Connecticut has a population of 908,420, and contains one medical college, located in New Haven, population 115,000. Board and lodging cost $4.50 and upward per week.

New Haven.

YALE MEDICAL SCHOOL.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. In 1879 a new charter changed the name to the one now used, and in 1884 the Connecticut Medical Society, which, from the granting of the first charter, had taken an active part in its control, surrendered its authority, and the University authorities assumed full control. The clinical advantages are embraced under the New Haven Hospital, which contains 175 beds and is the general hospital for New Haven; the Springside Hospital, which is connected with the city almshouse, and the State Hospital for the Insane, located in Middletown, about twenty-five miles distant, which, with its 1,800 patients, offers an opportunity for special instruction in insanity in addition to the clinics. Beside these, the University has just completed a $100,000 building for the dispensary service, which offers good material for clinical teaching. The faculty embraces 13 professors, 5 lecturers, 10 instructors and 19 assistants, a total of 47. The lecture rooms and laboratories are large and well equipped. Matriculants are admitted without examination, provided that they have received a degree in arts or sciences, that they present certificates showing that they have successfully prosecuted the subjects of the examination at some college, high school, academy or preparatory school approved by the faculty, or that they have passed matriculation examinations equivalent to those required at some approved professional school. This school is a member of the Association of American Medical Colleges. The course covers a four-year graded curriculum, eight months constituting a school year; the first two years the fundamental branches are studied, the third year is devoted to a systematic teaching of medicine, surgery, obstetrics and pharmacology, and in the fourth year clinical work, with medicine, surgery and the specialities, is presented. The fees are $150 each year; in the first year there are additional fees amounting to $18, and in the second, $8, and there is no graduation fee. The Dean is Dr. Herbert E. Smith, New Haven. During the session of 1903-4 there were 140 matriculants and 23 graduates. The ninety-second session opens Sept. 29, 1904, and closes June 28, 1905.

DISTRICT OF COLUMBIA.

Washington, population 278,718, has three medical colleges: Columbian University, Department of Medicine, Georgetown University School of Medicine, and Howard University Medical Department. Washington offers to the student of medicine many advantages. The Army Medical Museum, the Museum of Hygiene, the National Museum, the library in the Surgeon-General's office, the Toner Medical Library and Museum of Hygiene, in all over 125,000 volumes on medicine, open to the medical student a most profitable field. The clinical advantages offered by the various hospitals are good. Owing to the many boarding houses and hotels, board and lodging can be had at extremely reasonable rates.

Washington.

COLUMBIAN UNIVERSITY, DEPARTMENT OF MEDICINE.—This school was organized in 1821 as the Department of Medicine of Columbian College, which in 1873 became Columbian University. In connection with the Department of Medicine is the University Hospital, under the immediate control of the faculty of medicine, and established and maintained to afford clinical facilities for the students of the school. Beside the University Hospital, the Garfield Hospital, the Children's Hospital, the Central Dispensary and Emergency Hospital, the Providence Hospital, the Columbia Hospital, the Episcopal Eye and Ear Hospital, the U. S. Government Hospital for the Insane, and the Lutheran Eye and Ear Infirmary afford additional opportunities and are utilized for clinical instruction under the supervision of those members of the faculty who are on the visiting staffs of these institutions. Attendance on clinics is obligatory on junior and senior students. The faculty is composed of 30 professors and 35 demonstrators, instructors and assistants. This school is a member of the Association of American Medical Colleges. The laboratories are modern and equipped with all the needed apparatus for thorough work and instruction. Facilities are also provided for post-graduate and research work. The course of instruction is graded and extends through four years, each scholastic year consisting of eight months. Written and practical examinations are held during the term and written and oral in all subjects at the end of the school year. The total fees for the first year are $132; for the second year, $127; for the third year, $112, and for the fourth year, $122. A laboratory breakage deposit of $5 is required in the first and second years. The Dean is Dr. W. F. R. Phillips, 1607 16th St. N. W. New and commodious buildings were erected and occupied in 1902. The total registration of students for the session of 1903-04 was 306; graduates 52. The eighty-third session begins Sept. 29, 1904, and closes May 29, 1905.

SCHOOL OF MEDICINE, GEORGETOWN UNIVERSITY.—This school, organized in 1850, controls the Georgetown University Hospital, which affords excellent facilities for clinical teaching and ward classes. Clinics are also held for the benefit of the students in Providence Hospital, containing 500 beds, at the Government Hospital for the Insane, containing over 2,000 beds; in the Children's Hospital, the Central Dispensary, Emergency Hospital and the Garfield Hospital. Attendance on clinical instruction is obligatory in the third and fourth years. The faculty contains 26 professors, 27 instructors and assistants, total 53. This school is a member of the Association of American Medical Colleges. The building is conveniently located and contains spacious and well-ventilated lecture rooms, laboratories and library; the laboratories are equipped with the most approved instruments and appliances. The complete course of study extends over four terms of eight months each. Examinations are held at the end of each session. The fees are $110 each year. The Dean is Dr. George M. Kober, 1600 T St. The registration for 1903-4 was 140; graduates, 32. The next term opens on Sept. 29, 1904, and ends May 31, 1905.

HOWARD UNIVERSITY MEDICAL DEPARTMENT.—This institution was organized in 1867, and "in conformity with the spirit of the organic law of the University, is open to all, without regard to sex or race, who are qualified by good moral character, proper age and suitable education." The removal of any racial distinction has been taken advantage of by colored students, who compose a majority of those in attendance, but a number of white students are also receiving instruction. The Freedman's Hospital is a general hospital of 300 beds. The faculty comprises 17 professors and 15 lecturers and assistants, 32 in all. This college is a member of the Association of American Medical Colleges. Students are required to attend four courses of lectures in separate years of seven months each. The fees of each session are $80, plus $2 per part for dissecting material, and $10 for graduation. Board can be had at the school dining hall for $9 a month, and a room in the dormitory for $15 a term. The Dean is Dr. Robert Reyburn, 2129 F St. Registration for 1903-4 was 155; graduates, 38. The thirty-seventh session begins Oct. 1, 1904, and closes May 10, 1905.

GEORGIA.

Georgia, population 2,216,331, has three medical colleges: Medical College of Georgia, located in Augusta (population, 39,441); Atlanta College of Physicians and Surgeons, and Georgia College of Eclectic Medicine and Surgery, both in Atlanta (a manufacturing city of 89,872 population). Board and lodging may be obtained for from $3 to $5 per week.

Augusta.

MEDICAL DEPARTMENT, UNIVERSITY OF GEORGIA.—This school was organized as a medical academy in 1829, and in 1873 was made the Medical Department of the University of Georgia. Its faculty includes 12 professors and 13 assistants, 25 in all. The course is four years of six months each. Applicants for admission must, by examination, certificate or diploma, show that they possess educational qualifications equal to those required for second grade teachers in public schools; if they are deficient on examination, however, they are admitted, and they may remove the conditions any time before they appear for graduation. The City Hospital, with 130 beds; Lamar Hospital, with 80 beds; the Polyclinic and the Hospital for Contagious Diseases supply clinical material. Fees for the first two years are $75 each; third year, $100, and $130 for the last year. The Dean is Dr. DeSaussure Ford. Total enrolment for 1903-4 was 115; graduates, 26. The seventy-third session opens Oct. 1, 1904, and closes April 1, 1905.

Atlanta.

GEORGIA COLLEGE OF ECLECTIC MEDICINE AND SURGERY.—This school was organized in 1839, and has a faculty of 16. The college dispensary, Grady Hospital and Georgia Eclectic Hospital furnish clinical material. Applicants for admission must adhere to the requirements established in the National Confederation of Eclectic Colleges, of which this college is a member. The curriculum covers four years of six months each. The Proctor is Dr. W. M. Durham, 77½ Peachtree St. Total number of students for 1903-4 was 54; graduates, 17. The next session opens Oct. 4, 1904, and closes April 4, 1905.

ATLANTA COLLEGE OF PHYSICIANS AND SURGEONS.—This school was formed in 1898 by the consolidation of the Atlanta Medical College, organized in 1854, with the Southern Medical College, organized in 1879. It has a faculty of 13 professors and 30 assistants, a total of 43. Clinical facilities are furnished by the Grady Hospital, which is the general hospital for Atlanta, clinics are free to the graduating class. First course students are required to "give satisfactory evidence to the faculty of such educational qualifications as will be deemed necessary for the successful prosecution of their medical studies. These requirements will be similar to those of other reputable medical colleges in the country." The course of study covers four years of six months each and is graded. The buildings are large and a new building for practical anatomy has been added. Fees: First and second years, $75 each; third and fourth, $100 each. The Dean is Dr. W. S. Kendrick, 71 Washington St. Total registration of students for 1903-4 was 215; graduates, 31. Next session begins Oct. 6, 1904, and closes April 1, 1905.

ILLINOIS.

Illinois, population 4,821,550, has 16 medical colleges. Of these 15 are located in Chicago, a city of about 1,900,000 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, Chicago Homeopathic Medical College, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Harvey Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, American College of Medicine and Surgery, and Dearborn Medical College. Room and board cost $3 a week and upward. Lombard College Medical Department is located in Galesburg, a city of 19,407 inhabitants.

Colleges in Illinois have to admit students in conformity with the minimum requirements of the Illinois State Board of Health, as follows: "A diploma or certificate of graduation from a high school; or a certificate signed by a principal of a regularly-organized high school or by the examiner of the faculty of a recognized literary or scientific college or university, or by the state superintendent of public instruction, or a superintendent of public schools, of having successfully passed an examination in all the several branches embraced in the curriculum of a four years' high school course. The matriculation examination shall not be conducted by any member of the faculty of the medical college. The Illinois State Board of Health will require each applicant for a state certificate to present documentary evidence of his preliminary education, together with his medical diploma, when taking the examination of the board." These conditions will govern all persons admitted to the freshman year on or after Jan. 1, 1903.

Chicago.

RUSH MEDICAL COLLEGE.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 to 1898, and in the latter year became affiliated with the University of Chicago. The faculty is composed of 55 professors, 158 associates, instructors, etc., a total of 213. Good clinical facilities are furnished by Cook County Hospital, caring for about 20,000 patients yearly; Presbyterian Hospital, with 250 beds; a college dispensary, and an obstetric department. In addition to these, extramural clinical courses are offered at the West Side Hebrew Dispensary, St. Luke's Hospital, St. Anthony's Hospital, the Alexian Brothers' Hospital, Illinois Charitable Eye and Ear Infirmary and Chicago Isolation Hospital. Bedside instruction is given. The requirements for admission are those of admission to the better universities or colleges, and, in addition thereto, two years of college work. This college work must have included thorough courses in college chemistry (both inorganic and organic), college physics, and biology, all with laboratory work. For the sessions of 1905-6 a reading knowledge of German and French will be required in addition to the above. By the addition of a recently completed seven-story building, the facilities for clinical instruction are largely increased. The laboratories and their equipment are unexcelled. The curriculum covers graded work for four years of three quarters each, a quarter being three months. A continuous session is held, but credit for more than three quarters can not be obtained in any calendar year. A combined course for six years confers degrees of both science and medicine. All freshmen and sophomore studies are given at the University of Chicago. The total regular fees are $180 this year. Students in continuous attendance, i. e., three quarters in twelve months, may complete their course by paying the fees in vogue when they first enter the college. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Deans are Dr. Frank Billings, 100 State St., and Dr. John M. Dodson, 34 Washington St. Total registration, 1903-4, was 1,033; graduates, 160. The fiscal year begins July 1; final examinations are held at the end of each year.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1881, and in 1896 became the Medical Department of the University of Illinois. The faculty is composed of 39 professors, 105 assistants and instructors, a total of 144. The West Side Hospital, containing 125 beds; Cook County Hospital, and a college dispensary and maternity clinic supply most of the clinical material, but under certain conditions students of this school are admitted to the following hospitals for clinical study: Augustana, Baptist, Chicago, Woman's, Samaritan, Alexian Brothers', St. Mary's, and the Chicago Lying-in. This school is a member of the Association of American Medical Colleges. A magnificent building has recently been added to the college, and the laboratory, amphitheater and lecture-room space and equipment are excellent. The collegiate year is divided into two terms: the winter term of thirty-four weeks and the summer term of twelve weeks, of actual teaching. Attendance on the winter term is required in order to secure credit for a year's work, and attendance on four winter terms is required for graduation, except for students who are admitted to advanced standing. Attendance on the summer term is optional, and the work is supplementary to the work of the winter term. Students may obtain credit for work done in certain branches, but attendance on this term does not apply on the required thirty-two months' attendance necessary for graduation. The fees are $145 each for the first two years, $130 for the third and $155 for the fourth year. The Dean is Dr. William E. Quine, 103 State St. Total registration for 1903-4 was 697; graduates, 214. The fall term begins Oct. 1, 1904.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL.—This school was organized in 1859 as the Medical Department of Lind University, became independent as the Chicago Medical College in 1864, and in 1869 assumed its present relation as Medical Department of Northwestern University. The faculty comprises 41 professors and 71 assistants and instructors, in all 112. The newly completed Wesley Hospital, with 225 beds; Mercy Hospital, containing 400 beds; Provident Hospital, 100 beds; St. Luke's, 200 beds, and a college free dispensary furnish opportunities for clinical study to students of this college exclusively. Cook County, the People's, and the Chicago Lying-in hospitals are also open to them for study. Applicants for admission must, by diploma, certificate or examination, show possession of the educational acquirements required to enter the College of Liberal Arts of Northwestern University. This school is a member of the Association of American Medical Colleges. The laboratory and lecture-room facilities are ample and the equipment is good. The course of study covers graded work for four years of thirty-six weeks each. Optional summer laboratory and clinical courses are also given. Final examinations are held at the end of each semester. The fees for each year are $165 and a matriculation fee of $5, paid once, is charged. The Dean is Dr. N. S. Davis, Jr., 65 Randolph St. The total registration for 1903-4 was 587; graduates, 133. The next session opens Oct. 4, 1904, and closes June 3, 1905.

HAHNEMANN MEDICAL COLLEGE.—Homeopathic. This was organized in 1855, and has a faculty of 70. Hahnemann Hospital and a college dispensary supply clinical material. The requirements for admission are a high school diploma or its equivalent. The course is four years of seven months each. Fees: Matriculation, paid once, $5; each semester, $50, and hospital tickets, $5 each for third and fourth years. The Registrar is Dr. W. Henry Wilson. Total registration 1903-4, 138; graduates, 49. The next session begins Sept. 27, 1904.

CHICAGO HOMEOPATHIC MEDICAL COLLEGE.—This was organized in 1876, and has a faculty of 20 professors and 44 adjuncts, lecturers, etc., a total of 64. The Chicago Homeopathic and Cook County hospitals, together with a college dispensary, furnish clinical material. Applicants for admission must have had a four-year high school course, or its equivalent as a minimum. The course covers four years of eight months each. Total fees are about $110 for each year. The Dean is Dr. W. M. Stearns, 87 Wabash Ave. Total registration, 1903-4, was 115; graduates, 37. The next session opens September, 1904, and ends May, 1905.

BENNETT COLLEGE OF ECLECTIC MEDICINE AND SURGERY.—This school, organized in 1868, has a faculty of 32 professors and 5 assistants, 37 in all. The Bennett, Cook County and Baptist hospitals and a college dispensary supply clinical facilities. Matriculants must present a diploma or certificate or pass a satisfactory examination "in conformity with the minimum requirements of the

State Board of Health." The course covers four years of twenty-six weeks each. This school is a member of the National Confederation of Eclectic Medical Colleges. Fees for each year are $100, with a matriculation fee, paid once, of $5. The Dean is Dr. A. L. Clark, Elgin, Ill. Total registration, 1903-4, was 115; graduates, 10. The thirty-seventh session begins Sept. 27, 1904, and ends May 9, 1905.

AMERICAN MEDICAL MISSIONARY COLLEGE.—This school was organized in 1895 and has the primal object of educating men and women as missionary physicians. The faculty numbers 25. The didactics and laboratory work, covering the first two years, are carried on at Battle Creek, Mich., and the clinical studies in Chicago. A hospital with 20 beds, in connection with the college, together with a free college dispensary with an obstetric department, supply material for practical work. The college is a member of the Association of American Medical Colleges. The course covers four years of nine months each. Total fees are $125 for each of the four years. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1903-4 was 88; graduates, 21. The tenth session opens Sept. 20, 1904, and closes June 19, 1905.

ILLINOIS MEDICAL COLLEGE.—This school, organized in 1894, has a faculty of 31 professors and 20 assistants, a total of 51. A college dispensary and Cook County Hospital are available for clinical study. The requirements of admission include a high school diploma or its equivalent. The college is a member of the Association of American Medical Colleges. Attendance for seven months during each year is necessary for graduation. Total fees are about $125 for each year. The Dean is Dr. B. B. Eads, 103 State St. Total registration for 1903-4 was 237; graduates, 58. The next fall term begins Oct. 1, 1904.

HARVEY MEDICAL COLLEGE.—This is a night school, organized in 1891. The lecture and laboratory work is all in the evening between the hours of 7 and 10, six days of the week, and forty weeks of the year. The clinical work, hospital, dispensary, in-practice and out-practice, are between the hours of 10 a. m. and 10 p. m. Attendance on 100 clinical hours yearly before 7 in the evening is obligatory beside attendance by the seniors on night obstetric cases and Saturday evening clinic at Cook County Hospital. The faculty is composed of 42 professors, 21 instructors and assistants, total 63. The course covers four years of ten months each. The total fees are, each year, $200. The Dean is Dr. Frances Dickinson. Total registration for 1903-4 was 230; graduates, 18. The fourteenth session begins September, 1904, and ends June, 1905.

COLLEGE OF MEDICINE AND SURGERY.—Physio-Medical. This school was organized in 1896, and has a faculty of 44 teachers. A college dispensary supplies material for clinical work. The course covers four years of seven months each. Fees for the first, second and third years, $100 each, and $115 for the fourth. The Secretary is Dr. Florence Dressler, 2203 Gladys Ave. Total registration for 1903-4 was 70; graduates, 11. The next session begins September, 1904, and ends May, 1905.

HERING MEDICAL COLLEGE.—Homeopathic. This school was organized in 1892. Dunham Medical College, organized in 1895, was consolidated with this school in August, 1902. The faculty comprises 28 professors and 16 associates, lecturers, etc., in all 44. Hering College Hospital, Baptist and Cook County hospitals supply clinical facilities. The course covers four years of seven months each. The total fees for a full course are $300 if paid in advance, or $100 per year. The Dean is Dr. H. C. Allen, 103 State St. Total registration for 1903-4 was 92; graduates, 29. The thirteenth session begins Sept. 12, 1904, and ends April 11, 1905.

JENNER MEDICAL COLLEGE.—This is a day and evening school, organized in 1892. The faculty consists of 46 professors and 7 assistants, 53 in all. Cook County Hospital and college dispensary supply clinical material. The course covers four years of 40 weeks each and embraces laboratory, didactic and clinical instruction. The total fees each year are $100, with a $5 matriculation fee, paid but once. The Registrar is Dr. C. Shorman, 163 Randolph St. Total enrolment for 1903-4 was 122; graduates, 24. The next session begins Sept. 1, 1904, and will end June 30, 1905.

DEARBORN MEDICAL COLLEGE.—This school was organized in 1903, with a faculty of 38 professors and 4 assistants, a total of 42. The instruction, which is given in the evening only, extends over a period of four years of ten months each. Cook County Hospital, Samaritan Hospital and a college dispensary supply the clinical material. The total fees are: $5 matriculation fee, $110 tuition, and $10 laboratory deposit. The Dean is Dr. L. Blake Baldwin; the Secretary, Dr. J. L. Wells. Total registration for 1903-4 was 134; graduates, 17. The next session begins Aug. 29, 1904, and ends June 24, 1905.

AMERICAN COLLEGE OF MEDICINE AND SURGERY.—Eclectic. This school was founded in 1901 and has a faculty of 65. The requirements for entrance are in accord with the rules of the State Board of Health. The course is four years of eight months each. American and Cook County hospitals supply clinical material. The Secretary is Dr. J. D. Robertson, 103 State St. The annual fee is $100; matriculation fee is $5; a total fee for one year, with board, room, light and heat, is $208. The enrolment, 1903-4, was 264; graduates, 23. The next session begins Sept. 27, 1904, and closes May 15, 1905.

NATIONAL MEDICAL UNIVERSITY.—This was organized in 1891, and its courses include instruction in the methods of all the so-called schools of practice, including osteopathy. The faculty numbers 76. The requirements for entrance are in accordance with the requirements of the Illinois State Board of Health. Each year is divided into four quarters of thirteen weeks each, attendance on three quarters constituting one college year. The fees are $100 per year. The Registrar is Dr. L. D. Rogers, 533 Wells St. Total matriculants for 1903-4 were 234; graduates, 20. The autumn quarter will begin Sept. 30, 1904.

Galesburg.

LOMBARD COLLEGE, MEDICAL COURSES.—This school gives only the first year of the medical course, extending over eight months. It has a faculty of 12. The Dean is Dr. T. C. Kimble. Total registration, 1903-4, 20. The next session begins Sept. 1, 1904, and ends June 2, 1905.

INDIANA.

Indiana, population 2,516,462, has six medical colleges. Four are situated in Indianapolis, a city of 169,164 people: The Central College of Physicians and Surgeons, Medical College of Indiana, the Eclectic Medical College and the Physio-Medical College of Indiana. The clinical facilities of Indianapolis are good, and board and lodging can be obtained from $3 a week and upward. The Fort Wayne College of Medicine is situated in Fort Wayne, a railroad and manufacturing town of 45,115 inhabitants. Board and room can be obtained there at an average of $3 a week.

Indianapolis.

CENTRAL COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1879 and reorganized in 1901. The faculty numbers 23 professors and 28 lecturers and demonstrators, total 51. A new college building has been erected on the most up-to-date plans. Its floor space comprises 25,000 square feet, more than half of which is devoted to laboratory teaching. The school gives instruction largely by laboratory and clinical methods. Clinical facilities are furnished by a dispensary maintained by the college, by the City Dispensary, City Hospital, St. Vincent's Infirmary and the Central Hospital for the Insane. Bedside clinics are given to sections of senior class daily at City Hospital. This college was a charter member of the Association of American Medical Colleges. The course is four years of seven months each. The Dean, Dr. George D. Kahlo; the Secretary, Dr. John F. Barnhill. The fees are $75 for each year. Total registration, 1903-4, was 132; graduates, 21. The session for 1904-5 will open Sept. 20, 1904, and close April 20, 1905.

MEDICAL COLLEGE OF INDIANA.—This is the Medical Department of the University of Indianapolis, and was organized in 1869. The faculty embraces 30 professors, 38 adjuncts, lecturers, etc., a total of 68. The City Hospital, containing 200 beds; Indianapolis Dispensary; Central Hospital for the Insane, with a capacity for 1,800 patients; St. Vincent's and the Maternity hospitals, and a college dispensary provide clinical facilities; the wards in the charity hospitals are open to students of this college for bedside instruction. The laboratory and lecture-room space is ample. This college is a member of the Association of American Medical Colleges. The course extends over four years of seven months each. Fees: First and second years, $80 each; third, $75, and $100 for the fourth year, which includes graduation fee. The Dean is Dr. Henry Jameson, Newton-Claypool Bldg. Total enrolment for 1903-4 was 303; graduates, 86. The thirty-fifth session opens September, 1904, and closes April, 1905.

ECLECTIC MEDICAL COLLEGE OF INDIANA.—This school was organized in 1900 and has a teaching force of 31. The course is four years of six months each. Fees: For each year, $75, or for all four, $225; $25 for graduation. Total registration, 1903-4, 35; graduates, 7. The Dean is Dr. W. M. Brown, 732 Sheffield Ave. The next session begins Sept. 20, 1904, and ends April 12, 1905.

PHYSIO-MEDICAL COLLEGE OF INDIANA.—This school was organized in 1873, and has a faculty of 31. The course is four years of seven months each. Total fees for each year are $70. The Secretary is Dr. C. T. Bedford. Total enrolment, 1903-4, was 32; graduates 9. The next session begins Sept. 13, 1904, and closes April 13, 1905.

Fort Wayne.

FORT WAYNE COLLEGE OF MEDICINE.—This school is the Medical Department of the Northern Ohio University, located at Ada, and was organized in 1879. It has a faculty of 27 professors and 9 lecturers and assistants, a total of 36. St. Joseph's Hospital, with a capacity of 250 patients; Hope Hospital, with 200 beds; St. Roche's Hospital, having accommodation for 35 patients; Indiana School for Feeble-Minded Youth and Allen County Orphan Asylum, capable of holding 150 children, supply the clinical facilities. This school is a member of the Association of American Medical Colleges. The curriculum covers four years of seven months each. The course is practical, supplemented by lectures and laboratory work. The total fees for each year are $75, with an additional $5 matriculation fee, payable once. The Dean is Dr. C. B. Stemen, 715 Broadway. Total registration, 1903-4, was 46; graduates, 5. The next session opens Sept. 14, 1904, and closes April 18, 1905.

Bloomington.

INDIANA UNIVERSTY SCHOOL OF MEDICINE.—This school was organized in 1903, and gives only the first two years of the medical course, extending over eight months in each year. The faculty consists of 7 professors and 2 assistants, a total of 9. Dr. Burton D. Myers is the Acting Dean. The enrolment in 1903-4 was 18. The next session begins Sept. 20, 1904, and ends June 16, 1905.

IOWA.

Iowa, population 2,231,853, contains five medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City (population 7,987). In Des Moines (population 62,139) is the Iowa College of Physicians and Surgeons. In Sioux City (population 33,111) is the Sioux City College of Medicine. In Keokuk (population 15,641) is Keokuk Medical College, College of Physicians and Surgeons. Board and lodging may be had in Des Moines for $15 a month and upward and in the other cities named for from $2.50 to $5 per week.

Iowa City.

COLLEGE OF MEDICINE OF THE STATE UNIVERSITY OF IOWA.—This department was organized in 1870. The faculty is made up of 13 professors, 26 lecturers, demonstrators and assistants, a total of 39. The University Hospital, built in 1897 at a cost of $50,000,

supplies the clinical material. The school is a member of the Association of American Medical Colleges. The course of study covers four years of thirty-six weeks each, embracing graded laboratory, didactic and clinical work. Combined courses leading to more than one degree are offered. Total fees for each year are $65. The Dean is Dr. James R. Guthrie, Dubuque. Total number of students registered for 1903-4 was 251; graduates, 35. The thirty-fifth session opens Sept. 24, 1904, and ends June 15, 1905.

COLLEGE OF HOMEOPATHIC MEDICINE OF THE STATE UNIVERSITY OF IOWA.—This was organized in 1877. The faculty is composed of 12 professors and 12 lecturers and assistants, a total of 24, but some of these are of the faculty of the College of Medicine. The requirements for admission, and the work, with the exception of that pertaining to homeopathy, are the same as those for the other department. The fees are also the same. The Dean is Dr. George Royal, Des Moines. Total registration for 1903-4 was 35; graduates, 9. The twenty-eighth session begins Sept. 22, 1904, and will end June 14, 1905.

Des Moines.

DRAKE UNIVERSITY COLLEGE OF MEDICINE.—This school was organized in 1882 under the name of the Iowa College of Physicians and Surgeons. In 1900 it became affiliated with Drake University. The faculty consists of 17 professors and 25 assistants, a total of 42. The Mercy and Methodist hospitals and a large dispensary clinic furnish clinical material. The college is a member of the Association of American Medical Colleges. The requirements for admission, after the 1st of July, 1905, will be a full four years' high school course or its equivalent. The work covers a graded course of four years of nine months each. The total fees for the first two years are $107 each, including laboratory and dissecting material; for the last two years, $89 each, including hospital fees. The Dean is Dr. D. S. Fairchild. The total registration for 1903-4 was 65; graduates, 13. The twenty-third session begins Sept. 19, 1904, and ends June 19, 1905.

Keokuk.

KEOKUK MEDICAL COLLEGE, COLLEGE OF PHYSICIANS AND SURGEONS.—In 1849 the College of Physicians and Surgeons, Keokuk, was organized, and four years later it became the Medical Department of the University of Iowa, continuing as such until 1870, when the original name was resumed. By the union, in 1899, of this college with the Keokuk Medical College, organized in 1890, the present school under the above name was founded. The clinical material is good. St. Joseph's Hospital is open to the student for study and the clinics held there are large and varied. The faculty is composed of 17 professors and 3 assistants and demonstrators, 20 in all. This college is a member of the Association of American Medical Colleges. The studies embrace a graded course of four years of seven months each. The total fees for the first year are $63; for the second and third, $58 each, and $53 for the last year. The Secretary is Dr. C. E. Ruth. Total registration for 1903-4 was 267; graduates, 47. The next session begins Sept. 20, 1904, and ends April 25, 1905.

Sioux City.

SIOUX CITY COLLEGE OF MEDICINE.—This school was organized in 1891. The faculty numbers 22. Clinical material is supplied by St. Joseph's, Mercy and Samaritan Hospitals and a college dispensary. This college is a member of the Association of American Medical Colleges. The system of study embraces a four-year graded course, eight months being a school year. Final examinations are held at the close of each course of instruction. Matriculation fee, paid but once, $5; tuition, each year, $48; hospital fee, $5, and graduating fee, $20. The President is Dr. J. N. Warren. Total number of students registered, 1903-4, was 58; graduates, 12. The fifteenth session opens Sept. 13, 1904, and will close May 2, 1905.

KANSAS.

Kansas, population 1,470,495, has three medical colleges: Kansas Medical College is in Topeka (population 33,608), and the College of Physicians and Surgeons in Kansas City (population 55,000). In addition, there is a school which does not grant degrees, but prepares students in the first two years. This is the Medical School of the University of Kansas, at Lawrence, a town of 10,862 people. Board and lodging in all these places may be had for $3 to $5 per week.

Lawrence.

SCHOOL OF MEDICINE OF THE UNIVERSITY OF KANSAS.—This school does not confer the degree of Doctor of Medicine. It was organized in 1880. The faculty numbers 18. This school is a member of the Association of American Medical Colleges. Only the purely scientific subjects are taught, but the work in these is thorough, seventy-two weeks being devoted to the two-year course. The greater part of the work is in the laboratory, with recitations and assigned readings, the lectures being supplementary only. For this reason the equipment and arrangement of the laboratories have been given special attention. A combined course of four years is offered, conferring "the degree of bachelor of arts in medicine." The total fees to residents of the state are: First year, $35; second, $30; to non residents of the state, $60 and $50. The Acting Dean is Dr. C. E. McClung. The number of students registered for 1903-4 was 22. The next session begins September, 1904, and will end June, 1905.

Topeka.

KANSAS MEDICAL COLLEGE, MEDICAL DEPARTMENT OF WASHBURN COLLEGE.—This college, organized in 1890, has a faculty of 25 professors and 8 lecturers and assistants, 33 in all. Good material for both medical and surgical clinics is found in Christ's Hospital, with 100 beds, and Topeka State Hospital; the dispensary in the college building also supplies material for class demonstration. The college is a member of the Association of American Medical Colleges. The college building affords ample laboratory and lecture room space. The course of study is a graded one, covering four years of 30 weeks each. Individual instruction is especially aimed at. The total fees for the first three years are $70 each, and $30 for the last year. The Dean is Dr. H. L. Alkire. The total registration for 1903-4 was 104; graduates, 16. The fifteenth session begins Sept. 15, 1904, and will close April 20, 1905.

Kansas City.

COLLEGE OF PHYSICIANS AND SURGEONS.—This was organized in 1894 as the Medical Department of Kansas City University. The faculty is made up of 30 professors, 13 lecturers and assistants, a total of 43. Bethany Hospital, with 60 beds; St. Margaret's Hospital, a college dispensary and an outside obstetric department supply clinical material. Practical demonstration and bedside teaching is emphasized in the work. The requirements for admission are in accordance with the rules of the Association of American Medical Colleges. The course of study is a graded one of four years, seven months each. A scholarship is offered for $195, but, taken separately, the total fees for the first three years are $65 each, and for the fourth year $55; matriculation fee, $5, payable once. The Dean is Dr. J. E. Sawtell. The total registration of students for 1903-4 was 84; graduates, 10. The eleventh session opens Sept. 1, 1903, and will close March 30, 1905.

KENTUCKY.

Kentucky, population 2,147,174, has seven medical colleges. They are all situated in Louisville, a city of about 225,000 inhabitants, and are as follows: University of Louisville Medical Department, Kentucky School of Medicine, Louisville Medical College, Hospital College of Medicine, Southwestern Homeopathic Medical College, Kentucky University Medical Department, and Louisville National Medical College. Board and lodging in Louisville cost from $3 to $4 per week.

Louisville.

KENTUCKY SCHOOL OF MEDICINE.—This school was organized in 1850, and has a faculty composed of 20 professors, 19 lecturers, instructors and assistants, a total of 39. The College Hospital, City Hospital and the college dispensary furnish the facilities for clinical study. The student is brought directly into contact with the patient through dispensary and bedside work by dividing the classes into sections. This college is a member of the Association of American Medical Colleges. The laboratories and their equipment are good. The curriculum embraces a four years' course of 28 weeks each. The fees for the first two years are $120 each; for the third year, $100, and $90 for the fourth year. The Dean is Dr. W. H. Wathen, 628½ Fourth Ave. Total number of students registered for 1903-4 was 275; graduates, 58. The next session begins Dec. 15, 1904, and will end July 15, 1905.

LOUISVILLE MEDICAL COLLEGE.—This school was organized in 1869 and has a faculty of 12 professors and 14 instructors and assistants, 26 in all. The City Hospital, College Infirmary and a dispensary offer good clinical facilities. Applicants for admission must show by diploma, certificate or examination that they are sufficiently proficient in English, arithmetic, algebra, physics and such Latin as would be acquired in one year's study. The laboratories and lecture rooms are ample. The course of study covers four years of six months each. The fees for the first three years are $100 each; for the fourth, $90. The Secretary is Dr. Irvin Abell. Total registration for 1903-4 was 248; graduates, 61. The next session opens Sept. 21, 1904, and closes March 31, 1905.

HOSPITAL COLLEGE OF MEDICINE.—This school is the medical department of Central University of Kentucky and was organized in 1873. The faculty is composed of 14 professors and 35 assistants, lecturers, etc., a total of 49. The Gray Street Infirmary, City Hospital and a well-equipped college dispensary present good facilities for clinical study. This college is a member of the Association of American Medical Colleges. Laboratory work, which is a prominent feature of the course, is thorough and practical. The laboratories and amphitheaters are ample in equipment and capacity, and the hospital advantages give opportunity for personal bedside instruction. The course covers four years of six months each. Total fees for each of first two years, $75; for the third, $75, and $100 for the fourth year. The Dean is Dr. P. Richard Taylor. Total enrolment for 1903-4 was 421; graduates, 99. The thirty-first session opens Jan. 1, 1905, and closes July 1, 1905.

KENTUCKY UNIVERSITY MEDICAL DEPARTMENT.—This school was organized in 1898. The faculty is composed of 14 professors, 20 lecturers, demonstrators, etc., 34 in all. Broadway Infirmary, the City Hospital and a college dispensary furnish clinical material. The school is a member of the Association of American Medical Colleges. The buildings provide ample facilities for clinical, laboratory and didactic instruction. The course of study embraces graded work for four years of twenty-six weeks each. The calendar year is divided into four quarters of thirteen weeks each. Two quarters constitute a college year. Fees are $25 per quarter. The Dean is Dr. Thomas C. Evans, 419 W. Chestnut St. Total number of students registered in 1903-4 was 370; graduates, 71. The next session opens Oct. 1, 1904.

UNIVERSITY OF LOUISVILLE MEDICAL DEPARTMENT.—This school was organized in 1837, under the name, Louisville Medical Institute, and in 1846 assumed its present title. It has a faculty of 11 professors, 23 lecturers, demonstrators, etc., a total of 34. The University Hospital, City Hospital, Sts. Mary and Elizabeth Hospital, together with the college dispensary, furnish good clinical material. The course covers graded work for four years of six months each. There are two six months' courses in the year; one course runs from Sept. 26, 1904, to April 26, 1905; the other runs from Dec. 1, 1904, to July 1, 1905. Total fees: First year, $107; second, $122; third, $100, and fourth, $112. The Dean is Dr. J. M. Bodine. Total registration for 1903-4 was 210; graduates 38. The sixty-eighth session begins Sept. 26, 1904.

SOUTHWESTERN HOMEOPATHIC MEDICAL COLLEGE.—This college was organized in 1892 and has a faculty of 17 professors and 7 lecturers and assistants, 24 in all. A college dispensary supplies clinical material. The curriculum covers four years of seven

months each. Total fees. First and second years, $80; third, $70, and $65 for the fourth. The Dean is Dr. A. L. Monroe. Total number of students for 1903-4 was 21; graduates, 6. Next session opens Sept. 27, 1904, and closes April 26, 1905.

LOUISVILLE NATIONAL MEDICAL COLLEGE.—Colored. This was chartered in 1888 and shows a teaching force of 28. There is a four-year course, seven months to the year; the fees are $58, $58, $55 and $50 for the four years respectively. The Dean is Dr. W. A. Burney. The attendance, 1903-4, was 38; graduates, 4. The next session opens Oct. 3, 1904, and ends about May 3, 1905.

LOUISIANA.

Louisiana, having a population of 1,381,625, contains two medical colleges: Medical Department of the Tulane University of Louisiana and New Orleans University. They are both situated in New Orleans, a city of 287,104 people. The cost of room and board is from $16 to $22 a month.

New Orleans.

FLINT MEDICAL COLLEGE OF NEW ORLEANS UNIVERSITY.—Colored. This school was organized in 1889. The faculty is made up of 7 professors, 4 lecturers and instructors, 11 in all. Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic. This college is a member of the Association of American Medical Colleges. The curriculum covers a graded course of four years, thirty weeks each. The laboratories and lecture rooms are ample. Examinations are held monthly. Total fees for the first, second and third year are $40 each, and $50 for the last year. The Dean is Dr. H. J. Clements, New Orleans. Total enrolment for 1903-4 was 50; graduates, 5. The sixteenth college year begins Sept. 5, 1904, and will end March 18, 1905.

MEDICAL DEPARTMENT OF THE TULANE UNIVERSITY OF LOUISIANA.—This school was organized in 1834 as the Medical College of Louisiana, and became, by law, in 1847, the Medical Department of the University of Louisiana, and in 1884 the Medical Department of the Tulane University of Louisiana. The faculty and all other instructors number 48. By acts of legislature the Charity Hospital, with its 900 beds, has been opened to the students of this school for clinical study, not only in medicine and surgery, but also in obstetrics and gynecology. In the year 1903 there were 8,813 cases treated in the wards of this hospital; these were indoor patients, and, in addition, 19,302 outdoor patients were treated in the free dispensary department. The Milliken Memorial Hospital, with a capacity for 200 children, is also available for study of clinical cases. Bedside instruction is given by the attending physicians to these hospitals, and postmortem examinations are held before the students. The laboratories are large and well equipped, and the lecture rooms and recitation rooms are ample. The course of study covers four terms of twenty-eight weeks each. Total fees for the first two years are $135 each, and for the third and fourth, $145 and $170 respectively. The Dean is Dr. Stanford E. Chaille, New Orleans. The total number of medical students registered for 1903-4 was 438; graduates, 82. The seventy-first session begins Oct. 20, 1904, and will close May 3, 1905.

MAINE.

Maine, population 694,466, has one medical college, located in Portland, population 60,000. Board and lodging cost from $3 to $5 a week.

Portland.

MEDICAL SCHOOL OF MAINE.—This, the Medical Department of Bowdoin College, was organized in 1820. It has 13 professors and 5 instructors, total 18. Students of the first and second years are instructed in Brunswick, a town of 6,800 inhabitants. The third and fourth year classes are taught in Portland, where are situated the Maine General Hospital and other clinical advantages. Applicants for admission, unless they possess a diploma, are examined in English, arithmetic, algebra, geometry, United States history, physics, chemistry and Latin. The course covers four years of eight months each. The total fees are $120 for the first year; for the second and third, $110, and $110 for the fourth year. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1904, 101; graduates, 22. The next session opens Oct. 20, 1904, and closes June 21, 1905.

MARYLAND.

Maryland, with a population of 1,188,044, contains eight medical colleges, all located in Baltimore, a city with 508,957 inhabitants. They are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Woman's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School and Maryland Medical College. The Bay View Hospital, having a capacity for 2,000 patients, is open to students for clinical instruction, and furnishes good opportunities for practical demonstrations. Board and lodging can be obtained for from $3 to $5 per week.

Baltimore.

JOHNS HOPKINS MEDICAL SCHOOL.—This is the Medical Department of Johns Hopkins University, and was organized in 1893. The faculty comprises 11 professors, 10 lecturers and assistants, a total of 81. The Johns Hopkins Hospital and Dispensary furnishes abundant and varied clinical material; the lying-in department of the hospital, opened in 1896, is in successful operation. The requirements for admission demand that the applicant either has. (*a*) completed the chemical biologic course which leads to the A.B. degree in the university; (*b*) graduated at an approved college or scientific school, and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and a knowledge of physics, chemistry and biology, such as may be obtained from a year's course, including laboratory instruction. The school is a member of the Association of American Medical Colleges. The laboratories are large, well lighted and well equipped. The buildings are ample and built expressly for the purpose for which they are used. In the method of instruction special emphasis is laid on practical work in the laboratories, dispensary and in the wards of the hospital. The first two years are devoted to practical work in the laboratories, combined with demonstrations, recitations and lectures, and during the remainder of the course opportunity for the personal study of cases is given. The work covers a graded course of four years, eight and a half months to the year. Final examinations, partly written and partly oral, include practical tests in laboratory and clinical work; the general character of the student's work is closely watched. The charge for tuition is $200 per annum, with no fees unless a microscope is rented; that fee is $5 a year. The Dean is Dr. William H. Howell, 232 W. Lanvale St. Total registration in 1903-4 was 276; graduates, 45. The next session begins Oct. 4, 1904, and ends June 13, 1905.

SCHOOL OF MEDICINE OF THE UNIVERSITY OF MARYLAND.—This institution was organized in 1807 as the College of Medicine of Maryland, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland. The faculty is composed of 13 professors, 45 associates and lecturers, etc., a total of 58. The University Hospital, a part of which is used for a hospital for foreign seamen and another portion for a free city hospital, offers excellent clinical facilities. Beside this, the Presbyterian Eye, Ear and Throat Charity Hospital, in which 11,317 patients were treated in 1902; the Hospital for the Relief of Crippled and Deformed Children, containing 40 beds; the Maternity Hospital, and a college dispensary furnish material for clinical study. This school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are ample and well equipped. An entirely new laboratory building has just been erected. The fourth-year class, divided into sections, receives special training in practical laboratory work in a well-appointed clinical laboratory. Didactic, laboratory and clinical instruction, special attention being paid to bedside work, make up the system of teaching. The course covers four years of seven and a half months each, and is graded. The total fees for the first two years are $135 each; for the third year, $125, and $155 for the final year. The Dean is Dr. R. Dorsey Coale, Baltimore. The total number of students registered in 1903-4 was 340; graduates, 96. The ninety-eighth session begins Oct. 1, 1904, and will terminate May 15, 1905.

BALTIMORE MEDICAL COLLEGE.—This college was organized in 1881, and has a faculty of 54. The clinical material is furnished by the Maryland General Hospital, having a capacity of 200 beds; the Maryland Lying-in Hospital; the Mount Hope Retreat, which presents good opportunity for the study of nervous and mental diseases, and a college dispensary, which, beside the great number of ambulatory patients treated, has an outdoor department that permits of the advanced student taking care of charity cases and carrying out his own treatment. This college belongs to the Association of American Medical Colleges. The college buildings afford ample laboratory, clinical and lecture room space. Bedside teaching in the hospital wards is carried on in sections, and every member of the senior class is required to attend throughout the session. The course of study is graded and covers four years of eight months each. The Dean is Dr. David Streett. The total number of students registered in 1903-4 was 409; graduates, 77. The twenty-fourth session opens Sept. 20, 1904, and closes May 12, 1905.

COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.—This school was organized in 1872, and in 1878 Washington University School of Medicine, established in 1827, was consolidated with it. The faculty numbers 49. The clinical facilities, beside those afforded in common with other schools, are supplied by the Baltimore City Hospital, the Hospital for the Colored Race, containing 100 beds; the Nursery and Child's Hospital, with 150 beds; the Maryland Lying-in Asylum and a college dispensary. This school is a member of the Association of American Medical Colleges. The work covers a graded course of four years, seven months constituting a year. Total fees are $115, $115, $115 and $135 for the respective years. The Dean is Dr. Thomas Opie. The total number of students registered in 1903-4 was 343; graduates, 83. The next session opens Oct. 1, 1904, and closes May 18, 1905.

MARYLAND MEDICAL COLLEGE.—This school was organized in 1898 and has a faculty of 14 professors, 24 associates, lecturers, etc., 38 in all. The Franklin Square Hospital and a college dispensary furnish clinical material. The course of study covers four years of eight months each. A matriculation fee of $5 and total laboratory fees for the three years of $50 are charged; tuition is $75 each year. The Dean is Dr. J. Wm. Funck, 1631 Eutaw Pl. Total registration for 1903-4 was 223; graduates, 104. The seventh session begins Sept. 15, 1904, and closes in May, 1905.

BALTIMORE UNIVERSITY SCHOOL OF MEDICINE.—This school, organized in 1884, has a faculty of 10 professors and 25 lecturers, demonstrators, etc., in all 35. The Baltimore University Hospital, Lying-in Hospital and the clinical material used in common with the other schools supply the facilities for practical work. The course is four years of six months each. The fees are about $100 each year. The Dean is Dr. Hampson H. Biedler, 119 W. Saratoga St. Total registration for year 1903-4 was 71; graduates, 51. The twenty-first session opens Oct. 1, 1904, and closes April, 1905.

WOMAN'S MEDICAL COLLEGE.—This school was organized in 1882 and has a faculty of 18 professors, 14 associates, assistants and lecturers, a total of 32. The Hospital of the Woman's Medical College and a college dispensary furnish general clinical material, while abundant special material is furnished by the Presbyterian Eye and Ear and the Sheppard and Enoch Pratt Hospital (for mental cases). The college is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are equipped with all necessary apparatus; the practical work is emphasized. Eight months constitute a school year, and the course covers graded work for four years. The total fees for the first three years are $106 each, and $81 for the last year, with $30 graduation fee. The Dean is Dr. R. H. Thomas, 1718 John St. Total number registered for 1903-4 was 24; graduates, 3. The twenty-third session opens Oct. 1, 1904, and closes May 31, 1905.

SOUTHERN HOMEOPATHIC MEDICAL COLLEGE.—This school was organized in 1890, and has a faculty of 10 professors, 24 associates and lecturers, a total of 34. The clinical facilities are those offered by the Maryland Homeopathic Hospital, which has 55 beds, and the dispensary; the obstetric department also furnishes clinical material. Applicants for matriculation must pass a satisfactory examination in English, arithmetic, geography, history and Latin, unless they possess satisfactory evidence that they have done a corresponding amount of work. The course covers graded work for four years, seven months to the year. The fees are $105 for the first year, $100 each for the second and third, and $130 for the last year; $350 in advance for the full four years' course, with a reduction in the fees for fourth year to those whose averages exceed 90 per cent. in previous years. The Dean is Dr. George T. Shower, 421 Roland Ave. Total registration for 1903-4 was 39; graduates, 13. The fourteenth session begins first Tuesday in October, 1904, and ends first Tuesday in May, 1905.

MASSACHUSETTS.

Massachusetts, population 2,805,346, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons, and Tufts College Medical School. They are all situated in Boston, a city of 603,163 inhabitants. Board and lodging can be obtained for from $5 to $7 per week.

Boston.

MEDICAL SCHOOL OF HARVARD UNIVERSITY.—This was organized in 1782, and has a faculty of 34 professors, 115 associates and assistants, etc., a total of 149. Beside the clinical advantages mentioned, the Boston Lying-in Hospital, the Boston Dispensary, where 43,918 patients were treated last year; the Infants' Hospital, the Children's Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital, all furnish excellent opportunity to the student for clinical study. Students are also permitted to visit the Free Hospital for Women and Carney Hospital on application to the physicians on duty. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by special vote of the faculty in each case." Each candidate is required to hand in the original note book in which he recorded the work performed by him in qualitative analysis, and also to pass a written examination in theoretical and descriptive chemistry. If conditioned in chemistry one year is allowed in which to remove the condition. The laboratories and lecture rooms offer ample facilities, and the equipment is good; special facilities are open to those desiring to pursue advanced or original work. The course of study covers four years of nine months each; the course is graded, and each correlated group as taken up presents sufficient variety to avoid monotony. A series of written, oral and practical examinations are distributed throughout the course of study. Fees: Matriculation, $5; $200 each year. The Dean is Dr. William L. Richardson, 688 Boylston St. The total resigstration for 1903-4 was 364; graduates, 133. The 123d session begins Sept. 29, 1904, and ends June 28, 1905.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1880, and has a faculty of 25 professors, and 11 lecturers and assistants, a total of 36. Clinical facilities are furnished by the North End Hospital and Dispensary, Union General Hospital, and the city and state institutions. This school is a member of the Association of American Medical Colleges. The course of study covers graded work for four years of eight months each. The total fees for the first year are $100, and for each of the other years about $110, with a graduation fee of $30. The Registrar is Dr. John H. Jackson, 155 Franklin St., Fall River. Total students registered, 1903-4, 117; graduates, 27. The twenty-fifth session begins Sept. 21, 1904, and ends June, 1905.

BOSTON UNIVERSITY SCHOOL OF MEDICINE.—Homeopathic. This school was organized in 1873; in 1874 the New England Female Medical College, founded in 1848, was merged into it. The faculty includes 20 professors, 42 associates and assistants, etc., a total of 62. Clinical material is furnished by the Massachusetts Homeopathic Hospital, containing 235 beds, a dispensary, a maternity hospital, and the Westborough Insane Hospital, 800 patients. Candidates who have taken their degree in arts, philosophy or science are not examined; all others are examined in English, Latin, French or German, or history, mathematics, physics and chemistry. The instruction is graded and covers a period of four years, eight months each. Total fees for the first year are $105; for the second and third, $125 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 295 Commonwealth Ave. Total registration for 1903-4 was 99; graduates, 27. The thirty-second session opens Oct. 6, 1904, and closes June 7, 1905.

TUFTS COLLEGE MEDICAL SCHOOL.—This school was organized in 1893 as the Medical Department of Tufts College. It has a faculty of 31 professors, 77 assistants and lecturers, etc., a total of 108. Clinical material is furnished by the Boston City Hospital, Massachusetts Charitable Eye and Ear Infirmary, Free Home for Consumptives, Free Hospital for Women, Boston Dispensary, Cambridge Hospital, St. Elizabeth's Hospital, Carney Hospital and the college dispensary; the student has also the advantages derived from an out-department in connection with the Boston Dispensary. "Graduates of a high school, college or university, and students having certificates of entrance to a college or university, or holding the State of New York Regents' certificate," also certain approved preparatory school graduates, are admitted without examination; all others must pass an examination in English, Latin, physics and mathematics, including arithmetic, elementary algebra and plane geometry. The laboratories and lecture rooms are ample in their equipment and capacity. Teaching is carried on by means of lectures, recitations and practical work in the laboratories and clinics; frequent examinations are held during a course, and a final examination on completing the subject. Graded instruction covering four years of eight months each makes up the full course. The total fees are $150 each year; dissecting material is furnished at cost. The Dean is Dr. Harold Williams, 528 Beacon St. Total number of students for 1903-4 was 394; graduates, 50. The eleventh session begins Oct. 4, 1904, and ends June 15, 1905.

MICHIGAN.

Michigan, population 2,420,982, has six medical colleges. Two of these, University of Michigan, Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 14,509 people. Board and lodging cost from $2.50 to $5 a week. Detroit, a city of 300,000 inhabitants, contains three medical colleges, as follows: Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery. Board and room can be obtained for $3 a week and upward. Grand Rapids Medical College is located in Grand Rapids, population 87,565. Room and board cost from $3 to $3.50 a week.

Ann Arbor.

UNIVERSITY OF MICHIGAN, DEPARTMENT OF MEDICINE AND SURGERY.—This was organized in 1850, and has a faculty composed of 17 professors, 61 associates, instructors, etc., a total of 78. The University Hospital, with nearly 200 beds, furnishes the clinical facilities. The requirements for admission provide that the applicant, either by certificate or examination, show a sufficient knowledge of the following: English grammar, rhetoric and composition; United States and general history; algebra, through quadratics, plane and solid geometry and plane trigonometry; physics, biology and chemistry, these subjects to be accompanied by laboratory work; German or French and Latin. The laboratories and their equipment are good, and the training in them and in didactic work is thorough. The new medical building accommodating the laboratories of hygiene, bacteriology, physiologic chemistry, pathology, histology, embryology and anatomy is now completed and occupied. This school is a member of the Association of American Medical Colleges. The curriculum embraces four years of nine months each. A combined course leading to degrees in both arts and medicine in six years is offered. The total fees for Michigan students for the entire course of four years is about $300, and for others $350. The Dean is Dr. Victor C. Vaughan. Total registration for 1903-4 was 418; graduates, 101. Next session begins Sept. 27, 1904, and will end June 22, 1905.

HOMEOPATHIC COLLEGE, UNIVERSITY OF MICHIGAN.—This department of the University was organized in 1875, and has a faculty of 29 professors and 20 assistants, total 49; a part of the teaching force is from the other departments of the University. The Homeopathic Hospital, containing 140 beds, furnishes material for clinical teaching. The course covers four years of nine months each. The total fees for Michigan students are about $240 for the four years, and for other students about $295. The Dean is Dr. W. B. Hinsdale. The enrolment for 1903-4 was 69; graduates, 21. The next session begins Sept. 27, 1904, and closes June 22, 1905.

Detroit.

DETROIT COLLEGE OF MEDICINE.—This school was formed in 1885 by the union of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, established 1880. The faculty embraces 21 professors, 50 lecturers, instructors, etc., a total of 71. Clinical facilities are offered by the following hospitals: St. Mary's and Harper, each of which contain a free dispensary; Woman's, St. Luke's, the Children's Free Hospital and the House of Providence. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The work includes laboratory, didactic and clinical study. Fees: Matriculation, paid once, $5; tuition, each term, $65; hospital and laboratory tickets, each $10, and diploma fee, $30. The Secretary is Dr. H. O. Walker. Total enrolment for 1903-4 was 260; graduates, 72. The next session begins Sept. 21, 1904, and will close May 4, 1905.

MICHIGAN COLLEGE OF MEDICINE AND SURGERY—SAGINAW VALLEY MEDICAL COLLEGE.—These two schools, organized in 1888 and 1896 respectively, were consolidated last year, to continue on the site of the former. The faculty numbers 45. Clinical facilities are offered by a college dispensary, the Emergency Hospital and Detroit Eye and Ear Infirmary. This school is a member of the Association of American Medical Colleges. The course covers graded work for four years of eight months each. The fees are about $80 to $95 per year; third year, $70, and $95 for the fourth year. The Dean is Dr. Hal. C. Wyman, 46 W. Adams Ave., Detroit. Total registration for 1903-4 of the Michigan College of Medicine and Surgery was 110; graduates, 26. The next session begins Sept. 17, 1904, and will end May 17, 1905.

DETROIT HOMEOPATHIC COLLEGE.—This was organized in 1899, and has a faculty of 37. Grace Hospital and a college dispensary are available for study of clinical cases. Unless possessing at least a high school diploma applicants for admission will be examined by the state board. The course embraces work for four years of eight months each. Fees: From $70 to $90 per year. The Dean is Dr. D. A. MacLachlan; Registrar, J. M. Griffin. Total enrolment for 1903-4 was 50; graduates, 8. The next session begins September, 1904, and will close April, 1905.

Grand Rapids.

GRAND RAPIDS MEDICAL COLLEGE.—This was organized in 1897. The faculty is made up of 28 professors and 3 assistants, in all 31. Clinical cases in the U. B. A., St. Mary's and Woman's Butterworth hospitals and St. John's Orphan Asylum and a college dispensary are available for study. The course is four years of seven months each. The total fees are about $65 for each year. The Dean is Dr. C. H. White. Total enrolment for 1903-4 was 56; graduates, none. Next session opens Sept. 28, 1904, and closes May 1, 1905.

MINNESOTA.

Minnesota, population 1,751,394, contains three medical col-

leges: Hamline University College of Medicine, and the two medical departments of the University of Minnesota, viz., the College of Medicine and Surgery and the College of Homeopathic Medicine and Surgery. They are all situated in Minneapolis, a city with a population of 225,000. The various hospitals of Minneapolis furnish ample clinical material, and owing to the proximity to St. Paul, the clinical advantages of that city are available. The average cost of board and lodging is $20 a month.

Minneapolis.

COLLEGE OF MEDICINE AND SURGERY, UNIVERSITY OF MINNESOTA.—This department of the University of Minnesota was created in 1883, but at that time its only function was to examine for the degrees of B.M. or M.D. In 1888, by the consolidation and absorption of the Minnesota Hospital Medical College and the St. Paul Medical College, its present status was assumed. The faculty is composed of 30 professors and 72 instructors and assistants, a total of 102. The medical school occupies five buildings, and its laboratories are excellent. The last legislature made an appropriation of $105,000 for an additional laboratory of pathology and bacteriology. Eight large hospitals in the Twin Cities, beside the University dispensary and St. Paul dispensary, afford an abundant supply of material for clinical study. The curriculum covers four years of nine months each, and the work is carefully graded. The entrance requirement of one year of university, in addition to four years of high school work, limits the number of students, but assures a high standard of the student body. Total number of students registered in 1903-4 was 266; graduates, 67. Total fees for each year, $100. The Dean is Dr. Parks Ritchie. The next session opens Sept. 1, 1904, and closes June 2, 1905.

COLLEGE OF HOMEOPATHIC MEDICINE AND SURGERY.—This is a department of the University of Minnesota and was organized in 1888. The faculty comprises 19 professors and 14 assistants, 33 in all. The primary branches are taught by the professors of the College of Medicine and Surgery. The course is graded, extending over four years of nine months each. The total fees for the first two years are $100 each, and $80 each for the last two years. The Dean is Dr. Eugene L. Mann. Total number of students registered in 1903-4 was 18; graduates, 4. The next session opens Sept. 2, 1904, and closes June 3, 1905.

HAMLINE UNIVERSITY COLLEGE OF MEDICINE.—This was organized in 1883. Its faculty is composed of 26 professors, 17 instructors and assistants, a total of 43. The laboratories and lecture rooms are large, well lighted and supplied with all the necessary equipment. Clinical work is offered to the student in City Hospital, Asbury Methodist Hospital, Swedish, St. Barnabas' and St. Mary's hospitals in Minneapolis, Bethesda Hospital, City and County, and St. Joseph's, in St. Paul, and the college dispensary. This school belongs to the Association of American Medical Colleges. The course of study covers graded work for four years, eight and a half months making a year. Total fees, first year, $90; second year, $87.50, and for each of the last two, $80. The Dean is Dr. George C. Barton. Total number of students, 1903-4, was 86; graduates, 16. The next session begins Sept. 20, 1904, and ends June 7, 1905.

MISSISSIPPI.

Mississippi, population 1,551,270, has one medical college, the Medical Department of the University of Mississippi, located at Oxford, a city with 2,000 inhabitants.

Oxford.

MEDICAL DEPARTMENT UNIVERSITY OF MISSISSIPPI.—This school was organized one year ago, with 9 professors and 2 assistants, a total of 11. Each college term extends over eight and one-half months. The school is a member of the Association of American Medical Colleges. Dr. W. S. Leathers is the acting dean. The total registration in 1903-4 was 16; graduates, none. The next session begins Sept. 22, 1904, and ends June 10, 1905.

MISSOURI.

Missouri, population 3,106,665, has fifteen medical colleges. St. Louis, population 575,238, contains six of these, viz.: St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Marion-Sims-Beaumont College of Medicine, Washington University Medical Department, and Barnes Medical College. Board and lodging can be procured for from $3.50 to $5 a week. Kansas City, with 163,752 inhabitants, has six colleges, namely: Kansas City Medical College, University Medical College, the Hahnemann Medical College of Kansas City, Woman's Medical College, Medico-Chirurgical College and Eclectic Medical University. Room and board can be obtained in this city for from $3 to $5 a week. Ensworth Medical College and Central Medical College are located in St. Joseph, population 105,000; board and room can be had for from $3.50 to $5 a week. Department of Medicine of the University of Missiouri is at Columbia, a town of 5,651. Board and lodging can be obtained at Columbia for from $2 to $5 a week.

St. Louis.

ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1878, and has a faculty of 23 professors, 30 lecturers, instructors, etc., a total of 53. The resources for clinical instruction are Jefferson Hospital, which is open to students of this college only; City Hospital, with 600 beds; Female Hospital, having 250 beds; City Insane Asylum; City Poorhouse, and the college dispensary. This college is a member of the Association of American Medical Colleges. The laboratory and lecture-room space and the equipment are ample. The course of study covers four years of seven months each, and is graded. Total fees for the first year are $80; second, $70; third, $75, and $85 for the fourth year. The Dean is Dr. Waldo Briggs, 2600 Gamble St. Total number of students registered, 1904-5, was 240; graduates, 47. The twenty-sixth session begins Sept. 15, 1904, and ends April 13, 1905.

WASHINGTON UNIVERSITY MEDICAL DEPARTMENT.—This school was organized in 1891 from the St. Louis Medical College, which was founded in 1842. In 1899 the Missouri Medical College, organized in 1840, was added. The faculty comprises 38 professors, 23 lecturers and instructors, a total of 61. Clinical material is furnished by the St. Louis Mullanphy Hospital, Polyclinic Hospital, Bethesda Hospital and O'Fallon's Dispensary. In addition to these, the City Hospital is used in common with the other schools. The requirements for admission are higher than those of the Association of American Medical Colleges. The college buildings, of which there are two, furnish the best laboratory and lecture-room facilities. The course is four years of eight months each, and the system of study embraces laboratory, didactic and clinical teaching. The total fees for the first year are $125; second, $120, and for the third and fourth years, $100 each. The Dean is Dr. Robert Luedeking. Total registration of students for 1903-4 was 279; graduates, 63. The next session opens Sept. 23, 1904, and closes May 25, 1905.

MARION-SIMS-BEAUMONT COLLEGE OF MEDICINE.—This is the Medical Department of the St. Louis University. The faculty is composed of 41 professors, 58 lecturers and assistants, a total of 99. Clinical facilities are offered by Alexian Brothers' Hospital, with 250 beds; Rebekah Hospital, having a capacity for 50 patients; Josephine Hospital, 50 beds; Mt. St. Rose Throat and Chest Hospital, 150 beds; Good Samaritan Hospital, 50 beds; St. Mary's Infirmary, containing 150 beds; the City Hospital and Insane Asylum, each with a capacity of 600 patients. Grand Avenue Dispensary also furnishes good material for practical instruction. This school is a member of the Association of American Medical Colleges. The buildings afford ample laboratory and lecture-room space, and they are well equipped. The course of study embraces laboratory and clinical instruction, with recitations and lectures. The curriculum covers four years of seven months each. The total fees for the first year are $80; for the second and third, $75 each, and $100 for the fourth. The Secretary is Dr. H. W. Loeb, 3559 Olive St. Total number of students registered for 1903-4 was 407; graduates, 93. The next session opens Oct. 1, 1904, and closes May 1, 1905.

AMERICAN MEDICAL COLLEGE.—Eclectic. This was organized in 1873, and has a faculty of 17 professors, etc. St. Louis City Hospital and a college dispensary supply ample clinical material. The requirements for admission are those of the National Federation of Eclectic Medical Colleges, of which this college is a member. The course of study covers four years of seven months each. The total fees are: Tuition, $75 per year, dissecting material $5 per year for four years, final examination and graduation fee $25. Total registration for 1903-4 was 76; graduates, 12. The Dean is Dr. M. M. Hamlin, 2906 Lawton Avenue. The next session opens Sept. 19, 1904, and closes April 22, 1905.

BARNES MEDICAL COLLEGE.—(Medical Department Barnes University.) This school was organized in 1892, and has a faculty of 33 professors and 20 lecturers and assistants, a total of 53. The clinical advantages are those offered by Centenary Hospital, with 150 beds; City Hospital, the college dispensary and the outdoor obstetrical department. This college is a member of the Association of American Medical Colleges. The laboratories are well equipped and other facilities ample. The course of study includes graded work for four years of seven months each. The total fees for the first three years are $75 each year, and $85 for the fourth year. The Secretary is Dr. Pinckney French, Missouri Trust Building. Total registration for 1903-4 was 485; graduates, 125. The thirteenth session opens Sept. 19, 1904, and closes May 3, 1905.

WOMAN'S MEDICAL COLLEGE.—This school was organized in 1895, and has a faculty composed of 44 professors, 6 lecturers and assistants, a total of 50. The requirements for admission are those of the Association of American Medical Colleges. The course of study embraces graded work for four years of seven months each. The total fees for the first year are $68; second, $60; third, $55, and $80 for the fourth year. The Dean is Dr. Nannie P. Lewis, 1219 Wyandotte St. This school was not in session in 1903-4, and will not be in 1904-5.

KANSAS CITY HAHNEMANN MEDICAL COLLEGE.—This school was formed by the union of the Kansas City Homeopathic Medical College, organized in 1888, and the Kansas City University College of Homeopathic Medicine and Surgery. It has a faculty of 38. The City Hospital, Homeopathic Hospital, the Sanitarium Scarritt, University, Women's and Children's, German, Bethany and Children's Hospitals are open to its students for clinical study. The college dispensary and clinics also supply clinical material. Applicants for admission must show by diploma, certificate or examination that they have a sufficient knowledge of English, arithmetic, geography, United States history and Latin equal to one year's work. The course covers four years of seven months each. The Dean is Dr. S. H. Anderson, 1214 Main St. Total registration for 1903-4 was 52; graduates, 17. The seventeenth session begins September, 1904, and closes April, 1905.

HOMEOPATHIC MEDICAL COLLEGE OF MISSOURI.—This was organized in 1857, and has a faculty of 24 professors and 7 assistants, total 31. The curriculum covers fours years of seven months each. Fees: First year, $80; second, $75; third, $60, and $85 for the fourth year. The Dean is Dr. L. C. McElwee. Total registration for 1902-3 was 44; graduates, 10. The course begins in September and ends in April.

Kansas City.

KANSAS CITY MEDICAL COLLEGE.—This was established in 1869, and has a faculty of 20 professors and 30 lecturers, demonstrators, etc., in all 52. The clinical facilities are those of St. Joseph's Hospital, which also contains an out-patient department; the City

Hospital, Missouri Pacific Railway, Grand View and Douglas hospitals, St. Anthony's Home for Children and the college dispensary. This college is a member of the Association of American Medical Colleges. The building is large and well equipped, the course is graded, and the classes in practical work are divided into small sections and required to personally conduct series of obstetric, medical and surgical cases as a condition of graduation. The curriculum embraces four years of seven months each. The total fees for the first three years are $75 each, and $85 for the fourth. The Secretary is Dr. R. M. Schauffler, 302 Deardorff Bldg. Total registration for 1903-4 was 120; graduates, 34. The thirty-sixth session begins Sept. 6, 1904, and ends April 12, 1905.

UNIVERSITY MEDICAL COLLEGE.—This was organized in 1881 as the University of Kansas City Medical Department, and in 1888 was reorganized under its present name. Its faculty comprises 31 professors and 22 lecturers and assistants, a total of 53. Clinical material is furnished by the University Hospital, owned by the college, with 100 beds; the City Hospital, German Hospital, Home for the Aged, containing 147 beds; the Sisters' Hospital, Scarritt and St. Margaret's hospitals, the Children's Home, St. Joseph's Orphan Asylum, and the college dispensary and obstetric department. Instruction is given by means of lectures, recitatons, demonstrations and laboratory work and clinics. The school is a member of the Association of American Medical Colleges. The college building, which has been recently enlarged, furnishes ample accommodations for laboratories and lecture rooms. The course of study covers four years of seven months each, and the work is graded. The total fees for each of the first two years are $80, for the third $60, and $85 for the fourth year. The Dean is Dr. Samuel C. James, Bryant Bldg. The total number of students registered in 1903-4 was 234; graduates, 67. The twenty fourth session begins Sept. 6, 1904, and ends April 28, 1905.

MEDICO-CHIRURGICAL COLLEGE.—This school was organized in 1897 as the Kansas City College of Medicine and Surgery of Kansas City, Kan., and was reorganized the following year under its present name. Its faculty embraces a total of 52. Clinical facilities are furnished by the hospitals of Kansas City, used in common by the medical colleges, and a college dispensary. The course covers four years of six months each. The fees are: For the first year, $70; second, $65; third, $55, and $75 for the fourth year. The Dean is Dr. C. Lester Hall, Bryant Bldg. Total registration for 1903-4 was 84; graduates, 20. The next session opens Sept. 1, 1904, and closes April 15, 1905.

ECLECTIC MEDICAL UNIVERSITY.—This was organized in 1898, and has 22 in its faculty. The curriculum covers four years of six months each. Fees, about $70 each year, with a graduation fee of $15. The Dean is Dr. Theodore Doyle. Total students for 1903-4 was 60; graduates, 16. The next session begins Sept 5, 1904, and ends April 21, 1905.

Columbia.

DEPARTMENT OF MEDICINE OF THE UNIVERSITY OF THE STATE OF MISSOURI.—This department was organized at Columbia in 1872. The faculty includes 11 professors, 22 assistants, lecturers, etc., a total of 33. Clinical facilities are supplied by the Parker Memorial State Hospital. A new $40,000 building for the medical laboratories has just been completed and has excellent equipment. Special emphasis is laid on thorough training in the scientific branches which constitute the foundation of medicine. Four years' course, nine months each, carefully graded. The university offers also a combined course of six years, conferring degrees in both arts and medicine. The entrance requirements are a diploma from a good high school, or the full equivalent. There is no charge for tuition, the only expenses being a library fee of $10 each year, and small laboratory fees. The Dean is Dr. A. W. McAlester. Total registration of students for 1903-4 was 83; graduates, 10. The next session opens Sept. 12, 1904, and closes June 7, 1905.

St. Joseph.

ENSWORTH MEDICAL COLLEGE.—This was organized in 1888, and has a faculty of 25 professors and 7 lecturers and assistants, 32 in all. Ensworth Hospital, with 250 beds; City Hospital, containing 40 beds; the State Hospital, No. 2, which is open to the students once a week, and a college dispensary furnish clinical material. Applicants for admission must show by certificate or examination that they possess a sufficient knowledge of English, arithmetic, algebra, physics and Latin equal to one years' instruction. The building furnishes ample laboratory and lecture-room facilities. The curriculum covers a graded course of four years of seven months each. The fees are about $55 each for the first three years, and $75 for the fourth year. The Dean is Dr. Jacob Geiger. Total enrolment for 1903-4 was 94; graduates, 19. The next session opens Sept. 1, 1904, and closes March 31, 1905.

CENTRAL MEDICAL COLLEGE.—This school was organized in 1894, and has a faculty of 18 professors and 10 lecturers, in all 28. The Methodist and St. Joseph's hospitals, State Hospital, No. 2, and the City and County hospitals are available for clinical study; a college dispensary also supplies clinical material. The requirements for admission are the possession of a high school diploma, or its equivalent, or an examination. The curriculum embraces four years of seven months each. Fees: First year, $55; second, $50; third, $50, and $75 for the fourth year. The Secretary is Dr. C. A. Tygart. Total enrolment for 1903-4 was 72; graduates, 13. The next session begins Sept. 15, 1904, and will end April 15, 1905.

NEBRASKA.

Nebraska, population 1,066,300, has three medical colleges: The University of Nebraska College of Medicine and John A. Creighton Medical College of Omaha (population 102,555); and Lincoln Medical College, at Lincoln (population 40,169). Board and lodging can be obtained for from $3 to $5 a week.

Omaha.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE.—This was organized in 1880 as the Omaha Medical College. In 1902 an affiliation was entered into with the University of Nebraska, the name being changed to the College of Medicine of the University of Nebraska. The first two years are given at Lincoln. The last two years are given only at Omaha. The faculty is composed of 38 professors and 22 lecturers and assistants, total 60. The Douglas County, Immanuel, Wise Memorial, and Omaha Methodist hospitals, together with the college dispensary, furnish an abundance of material for clinical study and demonstration. The course consists of graded studies covering four years of eight months each. The method of instruction consists of didactic and clinical lectures, section clinics, demonstrations, recitations and laboratory work. The college building is well adapted to its purpose, the laboratories being well equipped and the lecture room commodious. The fees, including breakage deposits, are $90 for the first two years, and $100 for the last two years. Total number of students enrolled in 1903-4, 150; graduates, 30. The college is a member of the Association of American Medical Colleges. The Secretary is Dr. Paul H. Ludington, Bee Building. The twenty-fourth annual session will begin Sept. 20, 1904, and end May 25, 1905.

JOHN A. CREIGHTON MEDICAL COLLEGE.—This school, organized in 1892, is the Medical Department of Creighton University, and has a faculty of 32 professors and 8 associates, lecturers and assistants, a total of 40. The clinical facilities are those of St. Joseph's Hospital, containing 300 beds and having a clinical amphitheater connected with it; St. Bernard's Hospital, with 256 beds; Douglas County Hospital, Presbyterian and Mercy hospitals, and the college dispensary; the material is abundant and varied. The school is a member of the Association of American Medical Colleges. The building, which was completed in 1898, contains excellent facilities for laboratory and lecture-room work, and the equipment is good. In the methods of instruction, including clinical, didactic and laboratory work, special emphasis is laid on practical work. The course of study embraces four years of seven and one-half months each. The total fees for the first two years are $80 each, and $85 for each of the last two years. The Dean is Dr. D. C. Bryant, McCague Bldg. Total number of students registered in 1903-4 was 153; graduates, 27. The twelfth session opens Sept. 22, 1904, and closes May 1, 1905.

Lincoln.

LINCOLN MEDICAL COLLEGE.—Eclectic. This was organized in 1889, and has a faculty of 28. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges of which this college is a member. The course of study covers four years of thirty-two weeks each. The total fees for the first year are $80; second, $75; third, $75, and $85 for the fourth year, or $255 for all four years together. The Secretary is Dr. Samuel Metheny. Total number of students for 1903-4 was 83; graduates, 22. The next session begins Oct. 1, 1904, and ends May 10, 1905.

NEW HAMPSHIRE.

New Hampshire, population 411,588, contains one medical college, located in Hanover, population 1884.

Hanover.

DARTMOUTH MEDICAL SCHOOL.—This is the Medical Department of Dartmouth College, and was organized in 1797. Its faculty is made up of 14 professors and 5 instructors, 19 in all. The Mary Hitchcock Memorial Hospital, a cottage hospital of 36 beds, supplies the clinical material. Applicants for admission must possess an education at least equivalent to graduation from a registered high school. The laboratories afford good facilities for work. The course covers four years of thirty-two weeks each. Fees: $120 each year. The Dean is Dr. William T. Smith. The total number of students registered for 1903-4 was 68; graduates, 13. The work for the first and second years begins with that of the academic department, commencing Sept. 22, 1904, and closing June 24, 1905; for the advanced classes it begins Aug. 15, 1904, and ends April 1, 1905.

NEW YORK.

New York state, population 7,268,894, has ten medical colleges. Seven of these, College of Physicians and Surgeons, Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College and the University and Bellevue Hospital Medical College, are located in New York City, population 3,437,202. This city, with its hospitals and dispensaries, offers abundant clinical material. Board and lodging can be obtained for from $5 to $7 a week.

Albany Medical College is in Albany, a city of 100,000 people, where board and room can be had for from $4 to $5 a week.

The University of Buffalo Medical Department is situated in Buffalo, population 352,387; here board and lodging can be obtained for from $3.50 to $5 per week.

The College of Medicine, Syracuse University, is in Syracuse, a city with 108,374 inhabitants. Board and lodging can be obtained for from $3.50 a week upward.

The laws of the state of New York require of the prospective student of medicine a preliminary education equivalent to that obtainable in a four years' course in any of the public high schools recognized by the regents as maintaining a satisfactory standard. On proof of at least this amount of education, a medical-student certificate will be issued by the state authorities. Certain medical schools of the state have additional requirements.

1. The College of Physicians and Surgeons requires a medical student certificate issued on the attendance of at least one year's course of study in a college or scientific school registered by the Regents as maintaining a satisfactory standard (or the equivalent) or a certificate of the college entrance examination board covering 15 points, each point being the equivalent of a course of five periods weekly throughout the academic year.

2. Cornell University Medical College requires Regents' counts: in algebra 4 counts, plane geometry 4, elementary United States history and civics 2, second year English or its equivalent 8, second year Latin or the first four books of Caesar's Commentaries, or first year Latin and first year German or French or Spanish 8, making a total of 26 counts, with additional counts aggregating 48 counts.

3. University and Bellevue Hospital Medical College requires unconditional matriculation with a medical-student certificate.

4. The College of Medicine, Syracuse University, requires Regents' counts; in Latin 4 counts, plane geometry 4, algebra 2, and inorganic chemistry 2, with 36 additional, aggregating 48 counts.

New York City.

COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1807 and its present relation, that of Medical Department of Columbia University, was assumed in 1860. The faculty embraces 40 professors and 85 demonstrators, instructors, etc., a total of 125. The Vanderbilt Clinic, where 44,378 patients were treated during the year 1903, and which is equipped with all modern appliances for the study and treatment of disease, and Sloane Maternity Hospital, containing 116 beds, offer exclusive clinical advantages to students of this school. Beside these, Roosevelt Hospital, containing 238 beds; New York Hospital, with 150 beds; Bellevue, 900 beds; Presbyterian, 350 beds; St. Luke's, 225 beds; General Memorial, 100 beds, and New York Foundling hospitals, together with the Eye and Ear Institute, containing 40 beds; Willard Parker and Reception hospitals, 200 beds; Babies' Hospital, 50 beds; St. Mary's Free Hospital for Children, 120 beds, and the Hospital for Ruptured and Crippled, 250 beds, all offer free clinical teaching to matriculants of this school. The laboratories, lecture rooms and amphitheaters are ample in equipment and accommodation; special provisions are made to equip each student thoroughly in each of the laboratories and thus make the work individual. The work is graded, covering four years of eight months each. The Acting Dean is Dr. John G. Curtis. The total fees for the first year are $255; for the second and third, $250, and $275 for the fourth year. Total registration for 1903-4 was 691; graduates, 178. The next session begins Sept. 28, 1904, and ends June 14, 1905.

LONG ISLAND COLLEGE HOSPITAL.—This was organized in 1858 and has a faculty of 20 professors and 75 assistants, instructors, etc., a total of 95. Long Island College Hospital, containing 300 beds and connected with a four-story maternity hospital; Polhemus Memorial Clinic, and Hoagland Laboratory, completely equipped with the most modern apparatus, are all a part of the college. Beside the clinical facilities furnished by these, members of the faculty attend at Kings County, St. Luke's, Brooklyn, Norwegian, Williamsburg, Methodist Episcopal and the Brooklyn Eye and Ear hospitals, where the students are offered opportunities for clinical study. Many of these also contain out-patient departments, thus permitting advanced students to attend personally to cases. Bedside instruction is also given in the wards. The course covers four years of thirty weeks each. Fees: First year, $195; second, $200; third, $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1903-4, was 389; graduates, 47. The forty-seventh session opens Oct. 1, 1904, and closes June 2, 1905. The summer session has been discontinued owing to the lengthening of the regular session.

CORNELL UNIVERSITY MEDICAL COLLEGE.—This department of Cornell University was established in 1898. The faculty is composed of 39 professors and 106 instructors and assistants, a total of 145. The City Hospital, having 1,000 beds; Bellevue Hospital, New York Hospital, Presbyterian, Willard Parker and Reception, with 200 beds; New York Skin and Cancer; St. Francis, having a capacity of 220 beds; St. Vincent's, with 200 beds; the Manhattan Eye and Ear Infirmary, in addition to a large college dispensary, furnish the clinical resources; the material is abundant and varied. The first two years of the course are taken at New York or at Ithaca, and the work is devoted to the fundamental scientific subjects. The last two years are spent mostly in practical and clinical work and the hospital advantages are utilized. The Loomis Laboratory, a five-story modern building, is well equipped and supplies ample practical laboratory facilities required in the advanced work. "The essential features of the entire system is the division of the classes of the several years into small sections." Fees: First year, $190; second and third, $180 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1903-4 was 320; graduates, 55. The next session opens Sept. 28, 1904, and closes June 14, 1905.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE.—This is a department of the New York University, and was founded in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. The faculty is composed of 26 professors and 81 instructors, assistants, etc., in all 107. Bellevue and City hospitals, hospitals of the Workhouse and Almshouse, Manhattan State Hospital for the Insane, Willard Parker and Reception hospitals, Riverside Hospital for Contagious Diseases, Randall's Island, Presbyterian, St. Luke's, St. Vincent's, General Memorial, Gouverneur, Columbus, Harlem, New York Foundling, and the Society for the Lying-in hospitals, the New York Eye and Ear Infirmary, and a large college dispensary are open to students of this school for a study of clinical cases. The Carnegie building, a five-story structure adjoining the college, is devoted to laboratory instruction and investigation, and, with the other two large college buildings, affords good laboratory and lecture room facilities. A new six story addition to the laboratory building has just been completed. The course of instruction covers four years of eight months each. Actual clinical teaching, in conjunction with and found on laboratory work, recitation and didactic teaching, is emphasized to the greatest possible degree. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Edward G. Janeway. Total registration for 1903-4 was 368; graduates, 61. The next session opens Sept. 29, 1904, and closes June 9, 1905.

NEW YORK HOMEOPATHIC MEDICAL COLLEGE AND HOSPITAL.—This school, organized in 1858, has a faculty of 34 professors and 37 lecturers, instructors, etc., 71 in all. Flower Hospital, adjoining the college and having a completely equipped out-patient department; Metropolitan Hospital, New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children also furnish clinical facilities. The course covers four years of seven months each. Total fees for the first year, $130; second, $130; third, $125, and $155 for the fourth year. The Dean is Dr. W. H. King, 64 W. 51st St. Total students registered for 1903-4 was 118; graduates, 28. The next session begins Oct. 5, 1904, and ends May 11, 1905.

NEW YORK MEDICAL COLLEGE AND HOSPITAL FOR WOMEN.—Homeopathic. This school was organized in 1863, and has a faculty of 22 professors, 19 lecturers and assistants, total 41. The college hospital and dispensary, the Memorial Hospital for Women, Metropolitan, Flower and the Laura Franklin Free Hospital for Children afford clinical material. The course covers four years of twenty-six weeks each. Fees: First year, $155; second, $135; third, $125, and $155 for the fourth year. The Dean is Dr. M. Belle Brown, 30 W. 51st St. Total registration for 1903-4 was 33; graduates, 5. The next session opens Oct. 3, 1904, and closes May 9, 1905.

ECLECTIC MEDICAL COLLEGE OF THE CITY OF NEW YORK.—This was organized in 1865, and has a faculty of 15 professors and 18 lecturers, demonstrators, etc., 33 in all. A college dispensary, Beachonian Dispensary, Manhattan and Red Cross hospitals and Muncie Sanatorium supply clinical facilities. The work covers four years of seven months each. The total fees: First year, $125; second, $125; third, $125, and $155 for the fourth year. The Dean is Dr. George W. Boskowitz. Total registration for 1903-4 was 95; graduates, 8. The next session opens Sept. 28, 1904, and closes May, 1905. This school is a member of the National Confederation of Eclectic Medical Colleges.

Albany.

ALBANY MEDICAL COLLEGE.—This school was organized in 1838, and in 1873 it assumed its present relations, as Medical Department of Union University. The faculty is composed of 15 professors and 47 lecturers, instructors and assistants, a total of 62. Albany, St. Peter's, Child's and County hospitals, South End Dispensary, Eye and Ear Infirmary and the Albany Hospital for Incurables, also the free dispensaries connected with each, are open to students for clinical study. The curriculum embraces graded work for four years of seven and one-half months each. Teaching is carried on in the laboratories, clinics and lecture rooms. Examinations are held twice a year in all subjects. Fees: Third year, $110, and $130 for each other year. The Dean is Dr. Samuel B. Ward. Total registration for 1903-4 was 173; graduates, 41. The next annual session opens Sept. 27, 1904, and closes May 9, 1905.

Buffalo.

UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT.—This was organized in 1846 and has a faculty made up of 48 professors and 31 assistants, lecturers, etc., a total of 79. Buffalo General Hospital, Hospital of the Sisters of Charity, Erie County and German hospitals and the German Deaconess' Hospital supply ample clinical material for study. A college dispensary, recently organized, is also of value in practical work. The buildings and hospitals are well equipped for clinical and laboratory work. Bedside instruction is insisted on and the senior students are permitted to assist in operations and give anesthetics. This school is a member of the Association of American Medical Colleges. The course covers four years of seven months each. The tuition is $125 each year; this does not include laboratory fees. The Dean is Dr. Matthew D. Mann, 37 Allen St. Total registration for 1903-4 was 243; graduates, 54. The fifty ninth session opens Sept. 26, 1904, and closes May 2, 1905.

Syracuse.

COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY.—This school was organized in 1872 as the Medical Department of Syracuse University. The faculty is composed of 16 professors and 33 lecturers, instructors, etc., in all 49. Clinical facilities are furnished by St. Joseph's Hospital, with a capacity of 200 patients; Hospital of the House of the Good Shepherd, Syracuse Hospital for Women and Children, Onondaga County Orphan Asylum, and the Syracuse Free Dispensary. The laboratories and amphitheaters are large and well equipped. This school is a member of the Association of American Medical Colleges. The curriculum embraces a four years' graded course, eight months making a school year. The total fees for each of the four years are $130. The Dean is Dr. Henry D. Didama, 424 S. Salina St. Total number of students registered for 1903-4 was 131; graduates, 31. The next session opens Oct. 4, 1904, and closes June 7, 1905.

NORTH CAROLINA.

North Carolina, population 1,893,810, has four medical schools which grant degrees and one which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill (population 1,099) and at Raleigh (population 13,643). The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is located at Davidson (population 904).

and at Charlotte (population 18,000). Wake Forest School of Medicine is at Wake Forest (population 823).

Chapel Hill and Raleigh.

UNIVERSITY OF NORTH CAROLINA MEDICAL DEPARTMENT.—This school was organized in 1891, and formerly gave only the work of the first two college years at Chapel Hill. In 1902 the course was extended to four years by the establishment of a department at Raleigh, in which the last two years are given. Degrees will now be conferred and the faculty in the completed school of medicine numbers 29. It is a member of the Association of American Medical Colleges. The number of students enrolled in 1903-4 was 72; graduates, 4. Total fees are $85 per year. Board, room, light and heat may be had for from $84 to $102 per college year. The President is Dr. F. P. Venable, Chapel Hill. The next session will begin Sept. 5, 1904, and end May 31, 1905.

Raleigh.

LEONARD SCHOOL OF MEDICINE.—Colored. This department of Shaw University was established in 1882 by the American Baptist Home Mission Society to train colored students of medicine. It has a faculty of 11. A free hospital and dispensary supply clinical material. A preliminary entrance examination is given to applicants not possessing a certificate or diploma of educational requirements. The course covers four years of six months each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room costs $2 a week. The Dean is Dr. James McKee. Total enroiment for 1903-4 was 125; graduates, 21. Next session opens Oct. 1, 1904, and closes April 14, 1905.

Davidson and Charlotte.

NORTH CAROLINA MEDICAL COLLEGE.—This school was organized in 1893, and has a faculty of 21. The Presbyterian Hospital in Charlotte supplies the clinical facilities. The course covers four years of eight months each, the last year at Charlotte. Fees: First three years, $85 each, and $100 for the fourth year. The President is Dr. J. P. Monroe of Davidson; Dr. I. W. Faison, Charlotte, is Dean of the Faculty. The total registration for 1903-4 was 84; graduates, 17. The next session begins Sept. 7, 1904, and closes May 10, 1905.

Wake Forest.

WAKE FOREST SCHOOL OF MEDICINE.—This school was organized in 1902. It only gives the first two years of the medical course. Each annual course extends over nine months. The school is a member of the Association of American Medical Colleges. It has a faculty of 10, and last year enrolled 18 students. The fees are $85 a year. The Dean is Dr. Frederick K. Cooke. The next session opens Aug. 27, 1904, and closes May 25, 1905.

OHIO.

Ohio, population 4,157,545, has ten medical colleges. Four of these, the Medical College of Ohio, Eclectic Medical Institute, Miami Medical College, and Pulte Medical College are located in Cincinnati, a city of 325,902 inhabitants. The clinical advantages of Cincinnati are good; beside many smaller hospitals, the Cincinnati Hospital is open to the students for study. Board can be procured in Cincinnati for from $3 to $5 per week. The Laura Memorial Woman's Medical College has ceased to exist.

Cleveland, population 381,768, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. The City Hospital, with 275 beds, is used in common by them for clinical study. Board and lodging can be had for from $2.50 to $5 a week.

Columbus, population 125,560, contains two: Starling Medical College and Ohio Medical University. Board and lodging cost from $2.50 to $5 per week.

Toledo, with 131,822 people, has one medical school: Toledo Medical College. It has good clinical advantages. Board and room can be had for from $3 to $5 a week.

The laws of Ohio require that in order to practice medicine in this state, any student not possessing a diploma or certificate showing that he is possessed of the educational advantages required, must pass a satisfactory examination, under the direction of the State Board of Medical Registration and Examination, in the following subjects: Foreign languages—Two years of the Latin language. English—English literature, composition and rhetoric. History—United States history and civics, with reference to the constitutional phases of American history. Mathematics—Algebra through equations and plane geometry. Science—Botany or zoology; physiography or chemistry, and physics. This is the standard adopted by all the medical colleges in the state.

Cincinnati.

MEDICAL COLLEGE OF OHIO.—This is the Medical Department of the University of Cincinnati, organized in 1819, and has a faculty made up of 24 professors, 30 lecturers and assistants, a total of 54. Good Samaritan Hospital, with 100 beds; Cincinnati Hospital, with 550 beds, and a well-equipped college dispensary furnish clinical facilities. The buildings supply ample laboratory and lecture-room space, and their equipment is good. The course of study is graded and covers four years of eight months each. This school is a member of the Association of American Medical Colleges. The lecture fees are $125 each year for each student entering after July 1, 1903; $100 each year for those who have matriculated prior to July 1, 1903. In addition there is a matriculation fee of $5, payable but once, and a graduation fee of $25. Total registration of students for 1903-4 was 145; graduates, 46. The Dean is Dr. P. S. Conner, Cincinnati. The eighty-sixth session begins Sept. 28, 1904, and ends June 1, 1905.

MIAMI MEDICAL COLLEGE.—This school was organized in 1852, and has a faculty of 23 professors and 24 lecturers and demonstrators, a total of 47. The clinical facilities are furnished by the Cincinnati Hospital and a college dispensary. The Presbyterian Hospital, with the Laura Memorial Dispensary, has become a clinical department of the college. The undergraduates of the Laura Memorial College will continue their studies in the Miami College. This college is a member of the Association of American Medical Colleges. The curriculum embraces a four-year graded course of eight months each. The total fees are, for the first year $130; for the second and third, $125, and $150 for the fourth year. The Dean is Dr. J. C. Oliver, 628 Elm St. The total registration for 1903-4 was 99; graduates, 27. The next session opens Oct. 1, 1904, and closes June 1, 1905.

ECLECTIC MEDICAL INSTITUTE.—This school, organized in 1845, has a faculty of 24 members. The Seton Hospital, Cincinnati Hospital, and a college dispensary furnish clinical material. It is a member of the National Confederation of Eclectic Medical Colleges. The course covers four years of thirty weeks each. The fees are $75 for each year, with a graduation fee of $25. The Dean is Dr. Rolla L. Thomas, 792 East McMillan St. Total enrolment, 1903-4, was 143; graduates, 27. The next session begins Sept. 19, 1904, and closes April 21, 1905.

PULTE MEDICAL COLLEGE.—Homeopathic. This was organized in 1872 and has a teaching force of 21 professors and 14 assistants, 35 in all. Pulte Hospital, Cincinnati Hospital, Bethesda Hospital, Home of the Friendless and Foundlings, and a college dispensary supply clinical material. The curriculum covers four years of seven months each. Fees: First year, $80; for the second and third, $75 each, and $100 for the fourth. The Dean is Dr. Charles E. Walton. Total enrolment for 1903-4 was 22; graduates, 7. The next session opens Sept. 27, 1904, and closes May 2, 1905.

Cleveland.

THE CLEVELAND COLLEGE OF PHYSICIANS AND SURGEONS.—This school was organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869, and the Medical Department of the Ohio Wesleyan University in 1896, when it assumed its present title. The faculty is composed of 27 professors, 36 lecturers, assistants, instructors, etc., 63 in all. Cleveland General Hospital, Cleveland City Hospital and a college dispensary are used for regular clinical teaching. St. Alexis, St. John's and St. Clair hospitals are utilized for extra mural clinics. This school is a member of the Association of American Medical Colleges. The school is co-educational. The total annual fees are $130. The curriculum covers four years of eight months each. The Dean is Dr. R. E. Skeel, 785 Prospect St. Total enrolment for 1903-4 was 75; graduates, 19. The next term opens Sept. 21, 1904, and closes May 3, 1905.

WESTERN RESERVE UNIVERSITY MEDICAL COLLEGE.—The Medical Department was organized in 1843. Its teaching faculty includes 23 professors, 31 lecturers, demonstrators and assistants, a total of 54. Clinical facilities are offered students of this school by Lakeside Hospital, having 250 beds; St. Vincent's Hospital, having about 150 beds; City Hospital, with 250 beds; St. Alexis Hospital, with 250 beds, and the Home of Maternity, with the dispensary service at Lakeside and Charity hospitals. The laboratory chairs are endowed, the teachers devoting their entire time to teaching and research work. The new clinical laboratory has recently been added, where a systematic course of instruction is given. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight months each. Three years of college work are required for admission to first year of medical course. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 278 Prospect St. Total enrolment for 1903-4 was 89; graduates, 31. The next session begins Oct. 1, 1904, and closes June 15, 1905.

CLEVELAND HOMEOPATHIC MEDICAL COLLEGE.—This school was founded in 1857 by a consolidation of Cleveland University of Medicine and Cleveland Medical College, the former of which was incorporated in 1850, and is the second oldest homeopathic medical college in the United States. The faculty includes 32 professors and 41 adjuncts, lecturers, etc., 73 in all. The clinical facilities are obtained from the Cleveland Homeopathic Hospital, the Cleveland City Hospital, the Cleveland Maternity Hospital, and a college dispensary. The course embraces four years of thirty weeks each. Fees: First year, $110; second and third years, $105 each, and $125 for the fourth year. The Dean is Dr. Gaius J. Jones. Total number of students registered, 1903-4, was 85; graduates, 25. The next session opens Sept. 18, 1904, and closes May 8, 1905.

Columbus.

OHIO MEDICAL UNIVERSITY.—This school was organized in 1890, and has a faculty of 22 professors, 6 instructors, 5 assistants and 2 demonstrators, 35 in all. The Protestant Hospital, State Hospital, Ohio Penitentiary Hospital and a college dispensary provide material for clinical work. This school is a member of the Association of American Medical Colleges. The course is four years of 32 weeks each. Fees: First year, $105; second year, $100; third year, $100, and $110 for the fourth year. The Dean is Dr. George M. Waters. Total students for 1903-4 was 168; graduates, 41. The next session begins Sept. 20, 1904, and ends May 4, 1905.

STARLING MEDICAL COLLEGE.—This school was organized in 1847 and has a faculty composed of 20 professors and 16 lecturers, associates, etc., a total of 36. St. Francis Hospital, which is under the control of this faculty; Hawkes' Hospital of Mt. Carmel, the Lawrence Hospital, St. Anthony Hospital and a college dispensary are available for clinical study. This college is a member of the Asso-

ciation of American Medical Colleges. The work covers four years of thirty weeks each. Fees: $100 per year; graduation fee, $10. The Dean is Dr. Starling Loving. Enrolment for 1903-4 was 124; graduates, 33. The next session opens Sept. 15, 1904, and closes May 4, 1905.

Toledo.

TOLEDO MEDICAL COLLEGE.—The school was organized in 1882, and in 1904 became the Medical Department of Toledo University. It has a faculty of 15 professors, 21 lecturers and assistants, in all 36. Toledo Hospital, St. Vincent's and Robinwood Hospitals, Lucas County Infirmary Hospital, Toledo Hospital for the Insane, and a free dispensary supply clinical facilities. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight months each. The fees are $75 for each year, with a matriculation fee of $5, payable once. The Secretary is Dr. Park L. Myers, 1921 Franklin Ave. Total enrolment for 1903-4 was 33; graduates, 7. The next session opens Sept. 22, 1904, and closes May 10, 1905.

OKLAHOMA.

Oklahoma, population 398,331, has only one medical school, which is located at Norman, a city of about 3,682 inhabitants.

Norman.

SCHOOL OF MEDICINE, UNIVERSITY OF OKLAHOMA.—This school, which was organized in 1903, teaches only the first two years of the regular medical course, each course extending over a period of nine months. The total registration for 1903-4 was 9. The Dean is Dr. A. H. Van Vleet; the Registrar, Roy Hadsell. The next session begins Sept. 13, 1904, and ends June 10, 1905.

OREGON.

Oregon, population 413,536, has two medical colleges: Medical Department Willamette University, located in Salem, a city of 10,000 people, and University of Oregon Medical Department, in Portland, a city of about 125,000 population. Board and lodging may be obtained in Salem for from $3 to $5 per week, and in Portland for from $4 to $6.

Salem.

MEDICAL DEPARTMENT WILLAMETTE UNIVERSITY.—The school was organized in 1864. The faculty consists of 16 teachers. Clinical facilities for study are supplied by Salem Hospital, and a college dispensary. This school is a member of the Association of American Medical Colleges. The course embraces four years' work of six months each. Fees: First year, $110; second, $100; third, $75, and $50 for the fourth year. The Dean is Dr. W. H. Byrd. Total enrolment for 1903-4 was 42; graduates, 8. The next session begins Oct. 1, 1904, and ends March 30, 1905.

Portland.

UNIVERSITY OF OREGON MEDICAL DEPARTMENT.—This department of the State University was organized in 1887 and has a faculty of 14 professors and 14 assistants, lecturers, etc., a total of 28. Good Samaritan and St. Vincent's hospitals, containing 200 and 350 beds, respectively, furnish good material for clinical study. The requirements for admission are those of the Association of American Medical Colleges, but the members of the faculty do not hold examinations for entrance. The college building is modern and well equipped, presenting ample teaching facilities. The course is four years of seven months each. Fees: First year, $142.50; second, $137.50; third, $107.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Josephi, Portland. Total number of students for 1903-4 was 96; graduates, 17. The next session opens Sept. 15, 1904, and closes April 16, 1905.

PENNSYLVANIA.

Pennsylvania, population 6,302,115, has seven medical colleges. Of these Philadelphia, having a population of 1,293,697, contains six, as follows: University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia, and Temple College Department of Medicine. The clinical facilities of Philadelphia present abundant and varied material for study. Beside the individual hospitals connected with each of the schools the charity hospitals are open to all the students in common. Board and lodging costs from $4 a week upward.

The other school, Western Pennsylvania Medical College, is situated in Pittsburg, a city of 321,616 people. The cost of board and lodging is from $4 to $6 a week.

A preliminary examination is required of all applicants for a license to practice medicine or surgery in the state. This examination is held at stated intervals by the state examiners, and includes: (a) English composition, grammar and rhetoric; (b) mathematics, covering algebra and plane geometry; (c) elementary physics; (d) United States history, and (e) Latin equivalent to a year's study. On passing a successful examination a medical student certificate is issued to the applicant. This certificate will admit the possessor to matriculation in any medical college in the state.

Philadelphia.

UNIVERSITY OF PENNSYLVANIA DEPARTMENT OF MEDICINE.—This is the first medical college established in this country, having been organized in 1765 as the Medical Department of the College of Philadelphia; the first degree was granted in 1768. When from the College of Philadelphia the University of Pennsylvania was organized, in 1791, it became the Medical Department of the University, its present relation. The faculty is made up of 30 professors and 92 assistants, lecturers, etc., a total of 122. Abundant and varied clinical material is furnished by the University Hospital, capacity 300 beds, which treats over 14,000 cases annually; University Maternity Pavillion, with 50 beds; Philadelphia Hospital, containing 1000 beds; Pennsylvania, Children's and the Southeastern Hospital and Dispensary. Special attention is paid to bedside instruction and to thoroughly practical work. Applicants for admission must furnish evidence of the education required to enter the academic department of the university. The buildings known as Medical Hall, Medical Laboratory Building, the Laboratory of Hygiene, the Laboratories of Pathology, Physiology and Pharmacology, the Wistar Institute of Anatomy, and the Wm. Pepper Clinical Laboratory supply excellent laboratory and lecture-room facilities and are well equipped. The course embraces study for four years of nine months each. The total fees for each year are $200, with a matriculation fee of $5 for the first year. The Dean is Dr. Charles H. Frazier. Total enrolment for 1903-4 was 472; graduates, 96. The next session opens Sept. 30, 1904, and closes June 21, 1905.

JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA.—This school was organized in 1825, and has a faculty of 28 professors and 81 lecturers, demonstrators, etc., a total of 109. Jefferson Hospital, together with its Maternity Department, are used exclusively by students of the school for clinical study. Bedside instruction is given daily to small sections of the senior class. In addition, the following hospitals are open for study of clinical cases: Pennsylvania, Philadelphia, St. Joseph's, German, Municipal and Wills Eye hospitals. The course of study covers graded work of four years of eight months each. The laboratories are large and well equipped, a new five-story laboratory building having recently been added; the lecture rooms and amphitheaters are also ample. A new fireproof hospital is now building, to cost $850,000, to be finished in 1905. The tuition is $180 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total number of students for 1903-4 was 732; graduates, 165. The next session opens Sept. 26, 1904, and closes June 2, 1905.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA.—This school was organized in 1881 and has a faculty made up of 27 professors and 55 assistants, lecturers, etc., 82 in all. Opportunities for clinical study are offered exclusively to students of this school by the Medico Chirurgical Hospital, with 125 beds, and its children's and maternity hospital, having 30 beds. In common with other schools, the following are used: Philadelphia, Pennsylvania, German, Samaritan, St. Joseph's, St. Agnes', St. Mary's, Methodist, Jewish and the Philadelphia Lying-in hospitals. This school is a member of the Association of American Medical Colleges. With new laboratories, lecture rooms, a modern hospital and fine clinical amphitheater, this college is amply provided and the equipment is good. The work embraces four years of eight months each. Fees: $150 per annum; matriculation, $5, payable once. The Dean is Dr. Seneca Egbert. Total enrolment, 1903-4, was 414; graduates, 70. The next session opens Sept. 28, 1904, and will close May 28, 1905.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA.—This school was organized in 1850, and has a faculty of 10 professors and 38 assistants, lecturers, etc., in all 48. Clinical facilities are offered exclusively to this college by the Woman's Hospital and West Philadelphia Hospital for Women. Other clinical advantages offered are those of the Pennsylvania, German, Jewish, Children's and Philadelphia hospitals, Wills Hospital for Diseases of the Eye, and the Philadelphia Lying-in Charity. This school is a member of the Association of American Medical Colleges. The lecture room and laboratory equipment is good. The curriculum covers four years of eight months each. Fees: First year, $140; second, $145; third, $135.50, and $100.50 for the fourth year. The Dean is Dr. Clara Marshall. Total enrolment for 1903-4 was 159; graduates, 43. The fifty-fifth session begins Sept. 21, 1904, and will end May 18, 1905.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL.—Homeopathic. This was organized in 1848 and has a faculty of 16 professors and 40 lecturers, instructors, etc., in all 56. Hahnemann College Hospital and Pennsylvania Hospital furnish material for clinical work. The requirements for admission are those established by the Intercollegiate Committee of the American Institute of Homeopathy. The work covers four years of thirty-two weeks each. Fees: For each year, $150; matriculation, $5. Total number of students for 1903-4 was 201; graduates, 69. The Dean is Dr. Charles M. Thomas. The next session begins Sept. 26, 1904, and will end May 24, 1905.

MEDICAL DEPARTMENT OF THE TEMPLE COLLEGE.—This department was organized in 1901, and has a faculty of 18 professors and 22 assistants, etc., a total of 40. Instruction is given in the afternoon and evening, and the course extends over five years of nine months each. The fees are $125 per year. The Dean is Dr. I. Newton Snively. The enrolment for 1903-4 was 63; graduates, 2. The next session begins Sept. 14, 1904, and ends June 15, 1905.

Pittsburg.

WESTERN PENNSYLVANIA MEDICAL COLLEGE.—This is the Medical Department of the Western University of Pennsylvania, and was organized in 1886. The faculty is composed of 38 professors and 54 associates, assistants, etc., 92 in all. Clinical material for study is furnished by a college dispensary, and the Emma Kaufman Clinic, Reineman Maternity Hospital, Mercy, South Side, Passavant and St. John's hospitals. This school is a member of the Association of American Medical Colleges. The course of study embraces graded work for four years of nine months each. Special attention is given to practical bedside work. The total fees are $150 for each year. The Dean is Dr. J. C. Lange. Total enrolment for 1903-4 was 259; graduates, 51. The next session begins Oct. 1, 1904, and will close June, 1905.

SOUTH CAROLINA.

South Carolina, population 1,340,316, has one medical college, situated in Charleston, a city of 55,807 people. Board and room can be obtained for from $12 to $16 a month.

Charleston.

THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.—This was founded in 1823. The faculty is made up of 9 professors and 10 assistants, etc., 19 in all. The clinical facilities are those offered by the City Hospital, where surgical, obstetrical and medical instruction is given. Applicants for matriculation must show a diploma of graduation from some literary or scientific institution of learning or a certificate from some legally-constituted high school. The course covers four years of six months each. The total fees for each of the first two years are $100, and $75 each for the last two. The Dean is Dr. Francis L. Parker. Total enrolment for 1903-4 was 91; graduates, 23. The next session opens Oct. 1, 1904, and closes April 5, 1905.

TENNESSEE.

Tennessee, population 2,020,616, has twelve medical colleges. Of these the Medical Department of the University of Nashville, Vanderbilt University Medical Department, University of Tennessee Medical Department, Meharry Medical College and Southwestern Presbyterian University Medical Department are situated in Nashville, a city with a popuiuation of 80,865. The City Hospital, containing 100 beds, is used by all the schools in common for clinical study. Board and lodging cost from $3 to $4 a week.

Knoxville, population 32,637, contains two colleges, Tennessee Medical College and Knoxville Medical College. The cost of room and board in that city is from $2.50 to $4 a week.

Chattanooga Medical College and Chattanooga National Medical College are situated in Chattanooga, city of 30,154 people. Board and lodging cost there from $2 a week upward.

Memphis Hospital Medical College is located in the growing city of Memphis, population 102,320. Good board can be obtained for from $3 to $4 a week.

The University of West Tennessee is in Jackson, whose population is 15,000.

The other school, the Sewanee Medical College, is located at Sewanee, a mountain town of 1,200 people.

Nashville.

UNIVERSITY OF NASHVILLE MEDICAL DEPARTMENT.—This school, established in 1850, has a faculty of 13 professors and 14 lecturers, assistants, etc., in all 27. This school is a member of the Southern Medical College Association. The course of study covers four years of twenty-six weeks each. The total fees for each of the four years is $65. The Dean is Dr. William G. Ewing. Total enrolment for 1903-4 was 301; graduates, 41. The next session begins Oct. 1, 1904, and ends June 30, 1905.

VANDERBILT UNIVERSITY MEDICAL DEPARTMENT.—This school was founded in 1874, and in 1895, when the present medical building was completed, the course was extended, the standard raised, and the present faculty of 35, consisting of 18 professors and 17 associates, lecturers, etc., was appointed. The school is a member of the Southern Medical College Association. The course covers four years of six months each. The total fees for the first three years are $105 each, and $130 for the fourth year. The Dean is Dr. William L. Dudley. Total enrolment for 1902-3 was 168; graduates, 34. The next session begins Oct. 3, 1904, and ends April, 1905.

UNIVERSITY OF TENNESSEE MEDICAL DEPARTMENT.—This was organized in 1876 as the Nashville Medical College; its present relations were assumed in 1879. The faculty is composed of 14 professors and 14 lecturers, assistants, etc., 28 in all. The school is a member of the Southern Medical College Association. The course of study includes work for four years of six months each. The total fees for each of the first three years are $90, and $65 for the fourth year. The Dean is Dr. Paul F. Eve, 614 Broad St. Total enrolment for 1903-4 was 154 students; graduates, 30. The next session begins Oct. 3, 1904, and ends April, 1905.

MEHARRY MEDICAL COLLEGE.—Colored. This school was organized in 1876 as the Medical Department of Central Tennessee College, now Walden University, "for the purpose of furnishing to the colored people of the South an opportunity of obtaining a medical education." The faculty is made up of 10 professors and 11 instructors, demonstrators, etc., 21 in all. The work embraces a four-year graded course, six months to the year. The total fees for the first three years are $40 each, and $50 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1903-4 was 287; graduates, 57. The twenty-ninth session begins Sept. 1, 1904, and ends March 1, 1905.

SOUTHWESTERN PRESBYTERIAN UNIVERSITY MEDICAL DEPARTMENT.—This department was established a year ago. Dr. J. W. Brandau is Dean, and about sixteen members of the faculty were chosen. No further steps have been taken toward beginning work, and the probability is that nothing will ever be done.

Knoxville.

TENNESSEE MEDICAL COLLEGE.—This school was organized in 1889, and has a faculty of 13 professors and 7 assistants, 20 in all. A new building with large and well-fitted laboratories has been completed. City General Hospital and a free dispensary supply material for study of clinical cases. This school is a member of the Southern Medical College Association. The curriculum includes graded work for four years of seven months each. Fees: Matriculation, $5; annual fee, $50; graduation fee, $25. The Secretary is Dr. S. L. Jones. Total number of students for 1903-4 was 87; graduates, 10. The sixteenth session begins Nov. 1, 1904, and closes May 23, 1905.

KNOXVILLE MEDICAL COLLEGE.—Colored. This school was established in 1900, following the discontinuance of the Medical Department of Knoxville College, organized in 1895. The teaching force comprises 21. The course covers four years of six months each. Fees: First year, $42; second, $37; third, $30, and $40 for the fourth year. The Secretary is Dr. H. M. Green. Total number of students for 1903-4 was 30; graduates, 8. The next session opens Dec. 1, 1904, and closes May 30, 1905.

Chattanooga.

CHATTANOOGA MEDICAL COLLEGE.—This is the Medical Department of Grant University, and was organized in 1889. The faculty consists of 10 professors and 18 instructors, demonstrators, etc., total 28. Adequate clinical facilities are afforded by the wards of Baroness Erlanger Hospital, a county asylum, an outdoor clinic maintained in the college building, and all material furnished by the city physician's office which the faculty desire to utilize. The scholastic requirements are those of the Association of Southern Medical Colleges, and involve a strictly graded course covering four years of six months each. The total fees approximate $60 each session. The trustees materially added to the general facilities of the institution by the erection of another fine four-story building of brick and stone for the medical department about a year ago, wherein much modern and elaborate equipment has been installed. The Dean is Dr. E. A. Corleigh. The total enrolment for the session of 1903-4 was 164, of which 37 graduated. The sixteenth annual term opens Oct. 6, 1904, and ends about April 15, 1905.

CHATTANOOGA NATIONAL MEDICAL COLLEGE.—Colored. This was organized in 1898, and claims a teaching force of 19. The course covers four years of seven and a half months each. The total fees are $50 each year, with an additional graduation fee of $20. Total enrolment for 1903-4 was 9; graduates, 1. The Dean is Dr. T. W. Haigler, 602 E. 8th St. The next session begins Sept. 2, 1904, and ends April 28, 1905.

Memphis.

MEMPHIS HOSPITAL MEDICAL COLLEGE.—This school, organized in 1878, has a faculty of 10 professors and 18 assistants, beside quiz masters. Excellent clinical facilities are furnished by the City Hospital, Presbyterian Hospital, St. Joseph's Hospital and the East End Dispensary, the latter being located in the college building. The course includes graded work for four years of six months each. The total fees for the first three years are $65; for the fourth, $90. The Dean is Dr. W. B. Rogers. Total registration for 1903-4 was 566; graduates, 153. The twenty-fifth annual session will begin Oct. 1, 1904, and close April 30, 1905.

Jackson.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF WEST TENNESSEE—Colored. This school, organized in 1900, has a faculty of 11. The course is four years of seven months each. The fees are $40 per year; graduation, $10 extra. Registration, 1903-4, 35; graduates, 13. The next session opens Sept. 12, 1904.

Sewanee.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE SOUTH (Sewanee Medical College).—This school was organized in 1891, and has a faculty of 22. It is a member of the Southern Medical College Association. The course is four years of six months each. The fees are $65 for each of the first two years, $55 for the third and $80 for the last year. The Dean is Dr. John S. Cain. Total enrolment for 1903-4 was 148; graduates, 24. The thirteenth session commenced April, 1904, and will close October 25, 1904.

TEXAS.

Texas, population 3,048,710, has eight medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants. Good board and room can be procured for from $15 to $20 a month.

The Medical Department of Fort Worth University is at Fort Worth, population 35,000. The cost of board and room in that city is from $12 to $15 a month.

The Baylor University College of Medicine, the Dallas Medical College, the Medical Department of Southwestern University and the Physio-Medical College of Texas are situated in Dallas, population 55,000.

Galveston.

UNIVERSITY OF TEXAS MEDICAL DEPARTMENT.—This department of the State University was organized in 1891 and has a faculty of 26. The John Sealy Hospital, also having an outdoor department, and St. Mary's Infirmary supply good material for clinical study. The requirements for admission are proof, either by certificate or examination, that the candidate is sufficiently proficient in English, including grammar, composition and rhetoric; mathematics through plane geometry and algebra, including quadratics, and general history. The curriculum embraces graded work for four years of eight months each. Laboratories of chemistry, physiology, anatomy, pathology, bacteriology, histology, pharmacy and clinical medicine, completely equipped for practical work by students. Fees, to residents of the state: First year, $50; second and third, each $20, and $5 for the fourth. Non-residents of the state are required to pay an additional fee of $50 each year. The President is Dr. William L. Prather. Total registration for 1903-4 was 172; graduates, 23. The next session begins Oct. 3, 1904, and ends May 31, 1905.

Ft. Worth.

MEDICAL DEPARTMENT OF FORT WORTH UNIVERSITY.—This school was organized in 1894, and has a faculty of 15 professors and 17 lecturers, assistants, etc., in all 32. Clinical facilities are supplied by St. Joseph's Hospital, with 200 beds; the Benevolent Home, containing 75 beds; the Delia Collins' Rescue Home, having 50 beds, and a college dispensary. The school is a member of the Southern Medical College Association. The course covers four years of six months each. The total fees for each of the first three years are $75, and $100 for the fourth year. The Dean is Dr. Bacon Saunders. The total enrolment for 1903-4 was 106; graduates, 9. The next session opens Oct. 1, 1904, and closes April 7, 1905.

Dallas.

BAYLOR UNIVERSITY COLLEGE OF MEDICINE.—This is a new name for the University of Dallas Medical Department, which was organized in 1901. In June, 1903, it became the Medical Department of Baylor University at Waco. The faculty numbers 14 professors and 16 assistants, total 30. Parkland Hospital, with 90 beds; St. Paul's Sanitarium, Baptist Memorial Hospital and a college dispensary and hospital are utilized for clinical study. The course covers four years of six months each. The school is a member of the Association of Southern Medical Colleges. The fees are $75 for each of the four years, with a matriculation fee of $5, paid once, and a graduation fee of $25. The Dean is Dr. E. H. Cary. Total registration for 1903-4 was 68; graduates, 12. The next session opens Oct. 1, 1904, and closes April 5, 1905.

BELL MEDICAL COLLEGE.—This school was founded in 1903 by Dr. Arthur C. Bell, its present Dean. It has a total teaching staff of 15. The course of instruction extends over four years of six months each. The requirements for admission are the same as those prescribed by the Association of Southern Medical Colleges. Clinical instruction is given in the City Hospital, St. Paul Sanitarium, and the college dispensary. The fees for the first three years are $80, and $105 for the fourth year. Total registration for 1903-4, 72; graduates, 9. The next session begins Oct. 3, 1904, and closes April 1, 1905.

DALLAS MEDICAL COLLEGE.—This school was the Medical Department of Trinity University, but this relation has been severed. It has a teaching staff of 9 professors and 21 lecturers and demonstrators, a total of 30. The course covers four years of six months each. The Dean is Dr. Hugh L. McNew. Total registration for 1903-4 was 252; graduates, 25. The next session opens about Oct. 1, 1904, and closes about April 1, 1905.

PHYSIO-MEDICAL COLLEGE OF TEXAS.—This college was organized in 1902. It has a faculty of 24 professors and 4 assistants, total 28. The course is four years of twenty-six weeks each. The fees are, first year, $70; fourth year, $85; other years, $65. Enrolment, 1903-4, 21; no graduates. The Secretary is Dr. R. L. Spann. The next session opens Nov. 1, 1904, and closes about April 1, 1905.

SOUTHWESTERN UNIVERSITY MEDICAL COLLEGE.—This is the Medical Department of Southwestern University and was organized in June, 1903. It has a faculty of 31 professors and 8 instructors, total, 39. The course of instruction is graded and covers four years. Requirements for admission are equivalent to those prescribed by the Association of American Medical Colleges. The fees are: Matriculation, $5, paid once; annual tuition, $75; graduation, $25. The hospitals represented by the faculty and open for clinical teaching are: St. Paul's Sanitarium, City Hospital, Children's Home, Rescue Home, Woman's Home, St. Joseph Orphanage, St. Matthew's Home for Children, Dr. H. K. Leake's Private Infirmary, Out Door Clinic of the Settlement Home and Presbyterian Home for Children. The Dean is Dr. John O. McReynolds. Total registration 1903-4 was 38; graduates, 11. The second session opens Oct. 1, 1903, and closes April 3, 1905.

Texarkana.

GATE CITY MEDICAL COLLEGE.—The length of each course is seven months. The faculty numbers 20 professors and assistants. Registration, 1903-4, 84; graduates, 26. The Dean is Dr. J. W. Decker. The next session begins Oct. 1, 1904, and ends May 1, 1905.

VERMONT.

Vermont, population 343,641, has one medical school, located at Burlington, a town of about 20,000 people. Board and room costs from $3.50 to $5 a week.

Burlington.

MEDICAL DEPARTMENT UNIVERSITY OF VERMONT.—This school was organized in 1822, but suspended from 1836 until 1854, when it was reorganized. The faculty consists of 19 professors and 23 assistants, instructors, etc., in all 42. The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction. Applicants for admission must be graduates of a four-year high school course or take an examination to show equivalent educational qualifications. The laboratory and lecture-room space and equipment are good. A new and commodious college building is in process of construction. The course of study embraces graded work for four years of seven months each. The total fees for each of the first three years are $115 and $140 for the fourth year. The Dean is Dr. H. C. Tinkham; Secretary, Dr. B. J. Andrews. Total registration of students for 1903-4 was 225; graduates, 55. The fifty-second session begins Nov. 26, 1904, and ends June 28, 1905.

VIRGINIA.

Virginia, population 1,854,184, has three medical colleges, situated in Charlottesville (population 6,449) and Richmond (population 85,050). The clinical facilities in Richmond are good. Board and room can be obtained for $18 a month, and upward, in Charlottesville, and from $12 to $20 a month in Richmond.

Charlottesville.

UNIVERSITY OF VIRGINIA DEPARTMENT OF MEDICINE.—This school was organized in 1827, and has a faculty of 21. A free dispensary and the new four-story hospital—an addition to which, at a cost of $3,600, will be complete by Jan. 1, 1905—furnish clinical facilities. The requirements for admission are those of the Association of American Medical Colleges. The course is four years of nine months each. Fees: First year, $110; second, $100; third, $80, and $60 for the fourth year. Total enrolment for 1903-4, was 164; graduates, 31. The eightieth session opens Sept. 15, 1904, and closes June 15, 1905.

Richmond.

MEDICAL COLLEGE OF VIRGINIA.—This school was organized in 1838 as the Medical Department of Hampden Sidney College, and in 1854 the present name was assumed. The faculty is made up of 17 professors and 26 lecturers, instructors, etc., a total of 43. Clinical material is furnished by the Memorial Hospital and the City Free Dispensary; an outside obstetric department also furnishes opportunities for clinical work. The magnificent new Memorial Hospital, opened July, 1903, is under the exclusive control of this college for clinical purposes. The State Penitentiary, City Almshouse and other public charities and asylums of the city also afford opportunities for clinical work. This school is a member of the Southern Medical College Association. The buildings are large and contain well-equipped laboratories and amphitheaters. The course embraces four years of nearly eight months each. The fees are $85 for each year, with an additional graduation fee of $30. The Dean is Dr. Christopher Tompkins. Total registration for 1903-4 was 219; graduates, 41. The next session begins Sept. 27, 1904, and will end May 16, 1905.

UNIVERSITY COLLEGE OF MEDICINE.—This school was organized in 1893, and has a faculty of 19 professors, 34 lecturers, assistants, etc., a total of 53. Good clinical facilities are furnished by Virginia Hospital, with a maternity department and annex, which was built especially for the purpose of affording bedside instruction, and is owned and operated by the college; Richmond Eye, Ear and Throat Infirmary, containing 34 beds; the City Hospital, City Jail, State Penitentiary, and a college dispensary. Matriculation is in accord with the rules of the Association of American Medical Colleges, and of the Southern Medical College Association, to both of which this college belongs. The laboratory and lecture-room space and equipment are ample, and some of the instructors devote their entire time to the laboratories. The school lays especial importance on the careful instruction and guidance of each student. The curriculum covers four years of thirty-three weeks each. The total fees are $85 for each year. The President is Dr. J. Allison Hodges; the Dean is Dr. Landon B. Edwards, Richmond. Total enrolment for 1903-4 was 188; graduates, 25. The next session begins Sept. 27, 1904, and ends May 17, 1905.

WEST VIRGINIA.

West Virginia, population 958,800, has one medical college, the Medical Department of the West Virginia University, located at Morgantown, a city with 2,100 inhabitants. This school does not grant degrees, but prepares students in the first two years.

Morgantown.

WEST VIRGINIA UNIVERSITY MEDICAL DEPARTMENT.—This school was organized one year ago, and gives only the first two years of the medical course. Each college term extends over nine months. The faculty consists of 6 professors and 2 assistants, 8 in all. The school is a member of the Association of American Medical Colleges. Dr. J. M. Simpson is the Dean, and Dr. A. J. Collett the Secretary. Total registration in 1903-4 was 23. Next session begins Sept. 19, 1904, and closes June 15, 1905.

WISCONSIN.

Wisconsin, population 2,069,042, has two medical colleges, the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons. They are both situated in Milwaukee, a city of 300,000 people. Clinical facilities are furnished them in common by the County Hospital, with 300 beds, and the Milwaukee Hospital for the Insane. Board and lodging can be had for from $3 to $5 a week.

Milwaukee.

MILWAUKEE MEDICAL COLLEGE.—This school was organized in 1893, and has a faculty of 33 professors and 26 lecturers, instructors, etc., a total of 59. Good clinical material is furnished by Trinity and the County hospitals, Milwaukee Hospital for the Insane, and a college dispensary. This school is a member of the Association of American Medical Colleges. Ample laboratory and amphitheater facilities are afforded. The course covers four years of eight months each. The total fees are $125 each for the first three years and $135 for the fourth year. The President is Dr. William H. Earles. Total number of students for 1903-4 was 148; graduates, 29. The eleventh session begins Sept. 15, 1904, and will close about May 22, 1905.

WISCONSIN COLLEGE OF PHYSICIANS AND SURGEONS.—This college was organized in 1893, and has a faculty composed of 21 professors and 29 associates, assistants, etc., a total of 50. St. Joseph's Hospital, containing 150 beds; the college dispensary, the Milwaukee County Hospital, and the Hospital for the Insane supply facilities for clinical study. The school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are well equipped. The curriculum includes four years of eight months

each. Fees: Matriculation, paid once, $5; general ticket, $100; for the use of the microscope, a fee of $2 is charged for each course. The Secretary is Dr. W. H. Washburn. Total enrolment for 1903-4 was 86; graduates, 29. The next session begins Sept. 20, 1904, and ends May 18, 1905.

CANADA.

The Dominion of Canada, with a population of 5,335,055 (1900) distributed through seven provinces and the Northwest territories, an area which reaches from the Atlantic to the Pacific, contains only 9 medical colleges. Of these, 4 are situated in Ontario, 4 in the province of Quebec, 2 in Nova Scotia, and one in Manitoba. The distinction between university and college in Canada is definite, namely, the latter is a teaching body only and has no right to grant a degree.

London, Ontario.

MEDICAL DEPARTMENT OF WESTERN UNIVERSITY.—This school matriculates students in accordance with the requirements of the Provincial Council and has a course of four years. Victoria Hospital and St. Joseph's Hospital supply the clinical advantages. The fees are about $90 per year and $25 extra for graduation, with $5 for each examination each year. This school has over 100 students and from 10 to 20 graduates annually. The next session runs from September to May.

Kingston, Ontario.

QUEEN'S UNIVERSITY.—This school had 216 students registered in its medical department during 1903-4, and graduated 42. The faculty numbers 25.

Toronto, Ontario.

UNIVERSITY OF TORONTO, MEDICAL FACULTY.—All the lectures and demonstrations are given in the laboratories and lecture rooms of the University; more than two-thirds of the instruction in the third and fourth years is given in the wards and in the pathologic and clinical laboratories. A fifth year is now required by the Ontario Medical Council. The faculty numbers 88. Clinical instruction is given in the Toronto General Hospital, Mercer Eye and Ear Infirmary, Burnside Lying-in Hospital, Hospital for Sick Children, and St. Michael's Hospital. Before commencing, students who propose to practice in the Province of Ontario must satisfy, as to qualifications, the College of Physicians and Surgeons of Ontario (Provincial Board), but those who desire the degree of the university must obtain junior matriculation standing prior to admission to the second examination. Fees are: Registration (payable once), $5; each of the first four years, $100; fifth year, $50; for the degree M.B. and M.D., each $20. Number of students registered last session, 721; graduates, 96. The next session will commence Oct. 1, 1904. Trinity Medical College of Toronto, which has been in affiliation, was amalgamated with the university in 1903.

ONTARIO MEDICAL COLLEGE FOR WOMEN.—This college is not empowered to grant degrees, but it qualifies students fully to take the examination in any university. The faculty numbers 35. The fee for each year is $110, exclusive of hospital and university fees. The number of undergraduates, 1903-4, was 31; graduates, 4. Twenty-first session will open Oct. 1, 1904, and continue for eight months.

Montreal, Quebec.

MCGILL UNIVERSITY, FACULTY OF MEDICINE.—This college has a course of four years of nine months each. The faculty numbers 24 professors and 66 assistants, total 90. The total fees for the course are $500. Clinical instruction is given in the Montreal General Hospital, Royal Victoria Hospital, and Montreal Maternity Hospital. Students, except university graduates in arts, must pass the medical matriculation of this university or that of one of the provincial medical boards. Students registered during session 1903-4, 415; graduates in June, 1904, 86. The seventy-third session will commence Sept. 20, 1904.

UNIVERSITY OF BISHOP'S COLLEGE, FACULTY OF MEDICINE.—The course leading to the degree of C.M., M.D., extends over four years of nine months each. The annual fees are $100, which include all practical classes and material for the same. Students must, on entering the study of medicine, pass the college matriculation examination, or, if the license for the Province of Quebec is desired, that of the College of Physicians and Surgeons of that Province. Special facilities are offered for the practical teaching of obstetrics, and undergraduates are obliged to take entire charge of several accouchements before being allowed to take the final examination. Other clinical facilities are offered in the Montreal General Hospital, the Royal Victoria Hospital, the Western Hospital, the Hotel Dieu, and the Woman's Hospital. During the last session the students numbered 70; graduates, 10. The next session will open Sept. 15, 1904.

Quebec, P. Q.

UNIVERSITY LAVAL, FACULTE DE MEDICINE.—This is the Quebec branch of Laval University medical faculty. The course consists of four years. The fees for the entire course are from $200 to $300, according to preliminary qualifications. The matriculants are about 100 annually, and the graduates about 20.

Halifax, Nova Scotia.

FACULTY OF MEDICINE OF DALHOUSIE UNIVERSITY.—The course consists of four years of eight months each, and leads to the final M.D. and C.M. examination. Prospective students must pass the preliminary examination of the Provincial Medical Board, a university examination or a recognized equivalent. During last session (1903-4) there were 58 students, of whom 17 graduated. The faculty numbers 23, and the next session is from September to April (inclusive).

Winnipeg, Manitoba.

MANITOBA MEDICAL COLLEGE.—This is in affiliation with the University of Manitoba, and has a faculty of 21. Winnipeg General Hospital and St. Boniface Hospital supply clinical material. The fees are $400 for the course of four years. There were 108 students in 1903-4, and 15 graduates.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission to be maintained by colleges belonging to this Association are as follows:

SECTION 1.—Each college holding membership in this Association shall require of each student, before admission to its course of study, an examination, the minimum of which shall be as follows:

1. In English, a composition on some subject of general interest. This composition must be written by the student at the time of the examination, and should contain at least 200 words. It should be criticised in relation to thought, construction, punctuation, spelling, and handwriting.

2. In Arithmetic, such questions as will show a thorough knowledge of common and decimal fractions, compound numbers, and ratio and proportion.

3. In Algebra, such questions as will bring out the student's knowledge of the fundamental operations, factoring, and simple quadratic equations.

4. In Physics, such questions as will discover the student's understanding of the elements of mechanics, hydrostatics, hydraulics, optics, and acoustics.

5. In Latin, an examination on such elementary work as the student may offer, showing a familiarity usually attained by one year of study; for example, the reading of the first 15 chapters of Cæsar's Commentaries, and the translation into Latin of easy English sentences involving the same vocabulary.

SEC. 2.—In place of this examination, or any part of it, colleges, members of this Association, are at liberty to recognize the official certificates of reputable literary and scientific colleges, academies, high schools, and normal schools, and also the medical student's certificate issued by any state examining board covering the work of the foregoing entrance examination.

SEC. 3.—Colleges, members of this Association, may allow students who fail in one or more branches in this entrance examination the privilege of entering the first-year course, but such students shall not be allowed to begin the second course until the entrance requirements are satisfied.

SEC. 4.—Colleges, members of this Assocoiation, are free to honor official credentials issued by medical colleges of equal requirements, except in the branches of study embraced in the last year of their own curriculum.

SEC. 5.—Candidates for the degree of Doctor of Medicine in the year 1899 and thereafter shall have attended at least four courses of medical instruction, each course of at least six months' duration, no two courses of which shall have been in the same calendar year.

SEC. 6.—Colleges, members of this Association, are free to give to students who have met the entrance requirements of the Association additional credit for time on the four years' course as follows: (a) To students having the A.B., B.S., or equivalent degree from reputable literary colleges, one year of time; (b) To graduates and students of colleges, of homeopathic or eclectic medicine, as many years as they attended those colleges, provided they have met the previous requirements of the Association and that they pass an examination in materia medica and therapeutics; (c) To graduates of reputable colleges of dentistry, pharmacy, and veterinary medicine, one year of time.

SEC. 7.—A college not giving the whole four courses of the medical curriculum, and not graduating students, but otherwise eligible, may be admitted to membership.

At the last meeting of this Association new regulations were adopted. After July 1, 1905, matriculants must have a diploma from a four-year high school or an equivalent education. Full particulars were given in THE JOURNAL, July 25, page 274.

The following colleges are members:

College of Medicine, University of Southern California, Los Angeles, Cal.; University of California Medical Department, San Francisco,

Cal.; Colorado School of Medicine, University of Colorado, Boulder, Colo.; Denver and Gross College of Medicine, Medical Department of the University of Denver, Denver, Colo.; Yale University Department of Medicine (Yale Medical School), New Haven, Conn.; Columbian University Department of Medicine, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C.; Howard University Medical Department, Washington, D. C.; American Medical Missionary College, Battle Creek, Mich., and Chicago; College of Physicians and Surgeons, College of Medicine of the University of Illinois, Chicago; Illinois Medical College, Chicago; Northwestern University Medical School, Chicago; Rush Medical College (in affiliation with University of Chicago), Chicago; Fort Wayne College of Medicine, Ft. Wayne, Ind.; Central College of Physicians and Surgeons, Indianapolis, Ind.; Medical College of Indiana, University of Indianapolis, Ind.; Drake University College of Medicine, Des Moines, Iowa; College of Medicine University of Iowa, Iowa City, Iowa; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa; Sioux City College of Medicine, Sioux City, Iowa; Kansas Medical College, Medical Department of Washburne College, Topeka, Kan.; School of Medicine University of Kansas, Lawrence, Kan.; Hospital College of Medicine, Louisville, Ky.; Kentucky School of Medicine, Louisville, Ky.; Kentucky University Medical Department, Louisville, Ky.; Flint Medical College, Medical Department New Orleans University, New Orleans, La.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University Medical Department, Baltimore, Md.; University of Maryland School of Medicine, Baltimore, Md.; Woman's Medical College, Baltimore, Md.; College of Physicians and Surgeons, Boston, Mass.; Detroit College of Medicine, Detroit, Mich.; Michigan College of Medicine and Surgery, Detroit, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, Mich.; Hamline University College of Medicine, Minneapolis, Minn.; College of Medicine and Surgery of the University of Minnesota, Minneapolis, Minn.; Medical Department University of Mississippi, Oxford, Miss.; University of Missouri Department of Medicine, Columbia, Mo.; Kansas City Medical College, Kansas City, Mo.; University Medical College, Kansas City, Mo.; Marion Sims-Beaumont College of Medicine, Medical Department St. Louis University, St. Louis, Mo.; St. Louis College of Physicians and Surgeons, St. Louis, Mo.; Ino. A. Creighton Medical College, Medical Department of Creighton University, Omaha, Neb.; University of Nebraska College of Medicine, Lincoln and Omaha, Neb.; University of Buffalo Medical Department, Buffalo, N. Y.; Syracuse University College of Medicine, Syracuse, N. Y.; University of North Carolina Medical Department, Raleigh and Chapel Hill, N. C.; Wake Forest College School of Medicine, Wake Forest, N. C.; Medical College of Ohio, Medical Department University of Cincinnati, Cincinnati, Ohio; Miami Medical College, Cincinnati, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, Cleveland, Ohio; Western Reserve University Medical College, Cleveland, Ohio; Ohio Medical University, Columbus, Ohio; Starling Medical College, Columbus, Ohio; Toledo Medical College, Toledo, Ohio; University of Oregon Medical Department, Portland, Ore.; Willamette University Medical Department, Salem, Ore.; Medico Chirurgical College of Philadelphia, Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, Pa.; Western Pennsylvania Medical College, Medical Department Western University of Pennsylvania; Meharry Medical College, Medical Department Walden University, Nashville, Tenn.; University College of Medicine, Richmond; West Virginia University Medical Department, Morgantown, W. Va.; Milwaukee Medical College, Milwaukee, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 1764 Lexington St., Chicago.

SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The requirements for admission to the freshman year are exacted by the colleges belonging to this association.

ART. IV, SEC. 3. He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate from some legally constituted high school, general superintendent of state education, or superintendent of some county board of public education, attesting that he has been regularly examined and is possessed of at least the educational attainments required of first-grade teachers of public schools, or a certificate that he has passed the entrance examination to a University. A student may be given one month from the date of his admission to submit his certificate of qualification, and if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates issued in such cases must have the conditions printed plainly on the face of each.

A candidate for graduation (among other provisions), "must have attended, in a regular and reputable medical college, four full courses of lectures, of not less than six months (26 weeks) each, in four separate years, which is construed to mean that no two courses shall either commence or close in the same calendar year—that is, between January 1 and the ensuing December 31." (Art. VI, Sec. 2.)

The following colleges are members:

Medical Department University of Tennesesee, Nashville, Tenn.; Medical Department University of Nashville, Nashville, Tenn.; Medical Department University of the South, Sewanee, Tenn.; Medical Department Vanderbilt University, Nashville, Tenn.; Medical Department Fort Worth University, Fort Worth, Texas; Medical College of Virginia, Richmond, Va.; Tennessee Medical College, Knoxville, Tenn.; Medical College of Alabama, Mobile, Ala.; Birmingham Medical College, Birmingham, Ala.; University College of Medicine, Richmond, Va.; Medical Department Baylor University, Dallas, Texas; Medical Department, University of Mississippi, Oxford, Miss.

The secretary-treasurer is Dr. G. C. Savage, Nashville, Tenn.

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES.

The following are the present minimum requirements for admission to colleges members of this association.

1. Good English education, to be attested by (a) first grade teacher's certificate; or (b) a diploma from a graded high school, or literary or scientific college or university; or (c) regents medical students certificate; or (d) entrance examination covering a good English education including an elementary knowledge of natural history, physics and Latin.

2. Graduates from pharmaceutical, dental, and veterinary colleges may be allowed one year's time on a four-year medical course, only on condition that they comply with the entrance requirements, and pass all examinations and perform all laboratory work embraced in the course of study of the Freshman year. One year's advanced standing may be given students with degrees from a recognized literary college.

3. The course of instruction shall consist of a four-year graded course or its equivalent, as herein prescribed, including four sessions of six months each in four different calendar years.

The following colleges are members of this confederation:

American Medical College, St. Louis, Mo.; Bennett College of Eclectic Medicine and Surgery, Chicago, Ill.; California Medical College, San Francisco, Cal.; Eclectic Medical College of the City of New York, New York, N. Y.; Eclectic Medical Institute, Cincinnati, Ohio; Georgia College of Eclectic Medicine and Surgery, Atlanta, Ga.; Lincoln Medical College, Lincoln, Neb.; Kansas City Eclectic Medical University, Kansas City, Mo.

The secretary-treasurer is John K. Scudder, M.D., 1009 Plum St., Cincinnati, Ohio.

AMERICAN INSTITUTE OF HOMEOPATHY.

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

1. English Composition. Exercise on assigned theme, not less than 200 words. Exercise in reading. Exercise in correction of ungrammatical sentences.

2. Mathematics. Arithmetical exercises in (a) vulgar fractions; (b) decimals; (c) percentage; (d) proportion; (e) square and cube root; (f) weights and measures; (g) decimal system. Mensuration. (a) Definition of terms; (b) exercises under the more fundamental rules.

3. Geography (general facts about North America).

4. History. General, with particular reference to human progress in art, science and letters. (The examination to avoid exact dates and minor details.)

5. Latin Language. (a) Grammar; (b) four books of Cæsar, or its equivalent.

The colleges recognized as in good standing by this organization are: Hahnemann Medical College of the Pacific; Denver Homeopathic Medical College; Hahnemann Medical College, Chicago; Chicago Homeopathic Medical College; Hering Medical College; Homeopathic Medical Department of the State University of Iowa; Southwestern Homeopathic College; Kansas City Hahnemann Medical College; Southern Homeopathic Medical College; Boston University School of Medicine; Homeopathic Medical College of University of Michigan; College of Homeopathic Medicine and Surgery of University of Minnesota; Homeopathic Medical College of Missouri; New York Homeopathic Medical College; New York Medical College for Women; Cleveland Homeopathic Medical College; Pulte Medical College; Hahnemann Medical College of Philadelphia.

The secretary is Dr. Chas. Gatchell, 100 State St., Chicago.

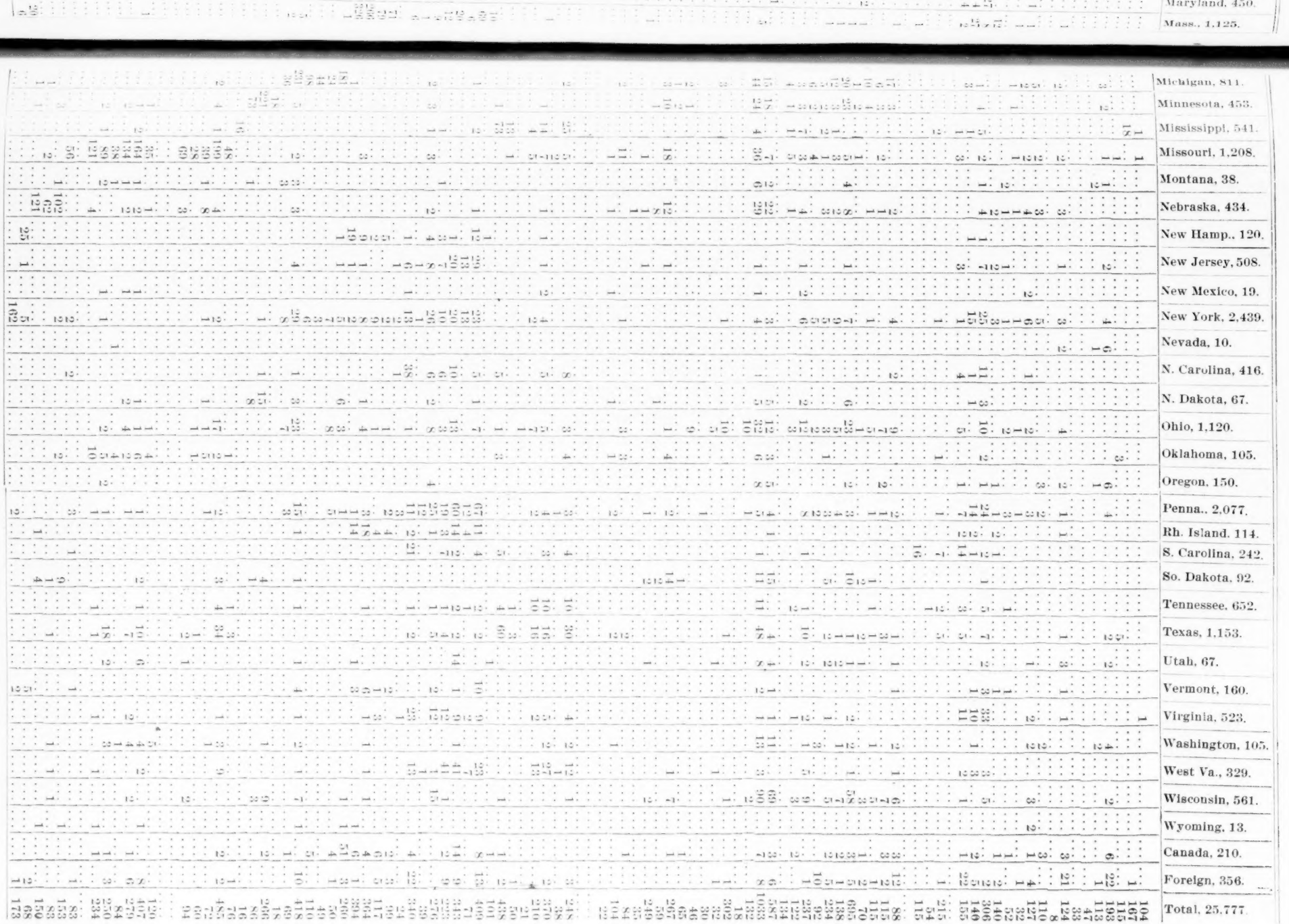
NAME OF COLLEGE.	Estimated population of city in which college is located.	No. of students registered session of 1903-1904.		Graduates, 1904.		Total number of teachers.	Number of weeks in college year.	Total graduates all colleges in state, 1904.	Total students in all colleges in state, 1903-4
		Men	Women	Men	Women				
ALABAMA								43	271
Birmingham Medical College.—R.	38,000	104	...	5	...	29	26	...	...
Medical College of Alabama.—R.	"	167	...	38	...	21	26	...	...
ARKANSAS								19	115
Medical Department Arkansas University.—R.	60,000	112	3	19	...	35	25	...	...
CALIFORNIA								140	628
Cooper Medical College.—R.	400,000	159	34	38	6	61	38	...	...
Medical Department University of California.—R.	"	100	13	24	3	70	39	...	...
California Medical College.—E.	"	38	9	7	1	35	32	...	...
Hahnemann Medical College of the Pacific.—H.	"	27	6	6	2	42	28	...	...
College of Physicians and Surgeons, San Francisco.—R.	"	109	15	27	2	46	34	...	...
Oakland College of Medicine and Surgery.—R.	67,000	7	1	...	...	23	35	...	...
College of Medicine, University of Southern California.—R.	102,479	101	9	21	3	39	30	...	...
*College of Physicians and Surgeons, Los Angeles.—R.	103,624	...	...	...	...	57	35	...	...
COLORADO								56	212
Denver and Gross College of Medicine.—R.	175,000	115	12	30	2	81	35	...	...
Denver Homeopathic College.—H.	"	26	6	7	...	32	30	...	...
Colorado School of Medicine.—R.	6,150	46	6	17	...	27	38	...	...
CONNECTICUT								23	140
Yale University, Department of Medicine.—R.	115,000	140	...	23	...	47	39	...	...
DISTRICT OF COLUMBIA								120	601
Columbian University, Department of Medicine.—R.	278,718	306	...	52	...	65	34	...	...
Georgetown University School of Medicine.—R.	"	140	...	32	...	53	34	...	...
Howard University, Medical Department.—R.	"	138	17	32	4	32	31	...	...
GEORGIA								74	384
Atlanta College of Physicians and Surgeons.—R.	89,872	215	...	31	...	43	26	...	...
Georgia College of Eclectic Medicine and Surgery.—E.	"	54	...	17	...	16	26	...	...
Medical College of Georgia.—R.	39,441	115	...	26	...	25	26	...	...
ILLINOIS								824	4,170
American Medical Missionary College.—R.	1,900,000	61	27	14	7	35	39	...	...
Bennett College of Eclectic Medicine and Surgery.—E.	"	103	12	7	3	42	32	...	...
Chicago Homeopathic Medical College.—H.	"	106	9	36	1	64	35	...	...
College of Medicine and Surgery.—Ph.M.	"	50	20	9	2	41	35	...	...
College of Physicians and Surgeons, Chicago.—R.	"	642	53	198	16	144	36	...	...
Hahnemann Medical College and Hospital.—H.	"	117	21	38	11	70	30	...	...
Harvey Medical College.—R.	"	215	15	16	2	63	40	...	...
Hering Medical College.—H.	"	64	28	17	12	46	30	...	...
Illinois Medical College.—R.	"	222	15	55	3	51	...	...	...
Jenner Medical College.—R.	"	120	2	24	...	53	43	...	...
Northwestern University Medical School.—R.	"	587	...	133	...	112	34	...	...
Rush Medical College.—R.	"	973	60	153	7	213	36	...	...
National Medical University.	"	228	6	19	1	76	36	...	...
American College of Medicine and Surgery.—E.	"	237	25	22	1	66	33	...	...
Dearborn Medical College, Chicago.—R.	"	127	7	14	3	42	40	...	...
Medical Department, Lombard College, Galesburg.—R.	19,407	18	2	...	...	12	39	...	...
INDIANA								117	560
Central College of Physicians and Surgeons.—R.	169,164	129	3	20	...	51	30	...	...
Medical College of Indiana.—R.	"	292	10	79	1	68	30	...	...
Physio-Medical College of Indiana.—Ph.M.	"	26	6	8	1	31	30	...	...
Eclectic Medical College of Indiana.—E.	"	30	...	3	...	30	26	...	...
Fort Wayne College of Medicine.—R.	45,115	44	2	5	...	36	31	...	...
Indiana University School of Medicine.—R.	7,000	17	1	...	...	9	38	...	...
IOWA								130	675
Drake University College of Medicine.—R.	91,515	61	4	13	...	42	39	...	...
Keokuk Medical College of Physicians and Surgeons.—R.	14,641	260	7	45	2	201	31	...	...
Sioux City College of Medicine.—R.	33,111	53	6	12	...	26	34	...	...
State University of Iowa, Homeopathic Medical Dept.—H.	7,987	35	...	9	...	24	38	...	...
State University of Iowa, Medical Department.—R.	"	240	9	45	4	39	38	...	...
KANSAS								35	240
College of Physicians and Surgeons of Kansas City.—R.	55,000	78	6	11	...	43	30	...	...
Kansas Medical College.—R.	33,608	92	12	15	9	33	32	...	...
School of Medicine, University of Kansas.—R.	10,862	21	1	...	...	18	39	...	...
KENTUCKY								263	1,213
Hospital College of Medicine.—R.	225,000	421	...	99	...	49	26	...	...
Kentucky School of Medicine.—R.	"	272	3	57	1	50	32	...	...
Louisville Medical College.—R.	"	248	...	61	...	26	30	...	...
Louisville National Medical College.—R.	"	36	2	4	...	28	30	...	...
Southwestern Homeopathic Medical College.—H.	"	15	6	2	4	22	30	...	...
Medical Department, University of Louisville.—R.	"	204	6	35	4	34	26	...	...
Kentucky University, Medical Department.—R.	"	370	...	71	...	34	26	...	...
LOUISIANA								96	488
Flint Medical College of New Orleans University.—R.	287,104	48	2	4	1	11	28	...	...
Tulane University, Medical Department.—R.	"	438	...	91	...	46	28	...	...
MAINE								22	101
Medical School of Maine, Bowdoin College.—R.	50,000	101	...	22	...	23	35	...	...
MARYLAND								472	1,725
Baltimore Medical College.—R.	508,951	409	...	77	...	54	33	...	...
Baltimore University School of Medicine.—R.	"	70	1	50	1	25	30	...	...
College of Physicians and Surgeons of Baltimore.—R.	"	343	...	83	...	49	32	...	...
Medical Department, Johns Hopkins University.—R.	"	253	23	42	3	81	36	...	...
Southern Homeopathic Medical College.—H.	"	32	7	11	2	34	30	...	...
University of Maryland, School of Medicine.—R.	"	340	...	96	...	58	32	...	...
Woman's Medical College of Baltimore.—R.	"	...	24	...	3	32	34	...	...
Maryland Medical College.—R.	"	223	...	104	...	38	30	...	...
MASSACHUSETTS								237	974
Boston University School of Medicine.—H.	603,163	81	18	22	5	62	35	...	...
College of Physicians and Surgeons.—R.	"	106	11	24	3	36	40	...	...
Harvard University Medical School.—R.	"	364	...	133	...	149	39	...	...
Tufts College Medical School.—R.	"	341	53	50	...	108	36	...	...
MICHIGAN								228	956
Detroit College of Medicine.—R.	300,000	260	...	72	...	71	32	...	...
Detroit Homeopathic Medical College.—H.	"	43	7	8	...	37	30	...	...
Michigan College of Medicine and Surgery.—R.	"	109	1	25	1	36	34	...	...
Grand Rapids Medical College.—R.	87,565	47	2	...	...	32	30	...	...
University of Michigan Dept. of Medicine and Surgery.—R.	14,509	384	34	91	10	78	38	...	...
University of Michigan Homeopathic Medical College.—H.	"	60	9	20	1	49	38	...	...
MINNESOTA								88	370
College of Homeopathic Med. and Surg., Univ. of Minn.—H.	225,000	15	3	3	1	33	39	...	...
College of Medicine and Surgery, Univ. of Minnesota.—R.	"	259	7	67	1	102	38	...	...
Medical Department of Hamline University.—R.	"	81	5	16	...	43	37	...	...
MISSISSIPPI								...	16
Medical Dept., University of Mississippi, Oxford.—R.	2,000	15	1	...	...	11	37	...	...

*First session begins Oct. 1, 1904.

Name of College.	Estimated population of city in which college is located.	No. of students registered session of 1903-1904.		Graduates, 1904.		Total number of teachers.	Number of weeks in college year.	Total graduates all colleges in state, 1904.	Total students in all colleges in state, 1903-4.
		Men	Women	Men	Women				
MISSOURI								546	2,340
Medico-Chirurgical College.—R.	163,752	84	...	20	...	52	32	...	...
*Woman's Medical College.—R.	"	...	...	...	...	...	...	...	...
University Medical College of Kansas City.—R.	"	234	...	67	...	53	30	...	...
Kansas City Hahnemann Medical College.—H.	"	42	10	14	3	38	28	...	...
Kansas City Medical College.—R.	"	120	...	34	...	49	31	...	...
Eclectic Medical University.—E.	"	51	9	14	2	25	32	...	...
Central Medical College.—R.	105,000	66	6	13	...	28	30	...	...
Ensworth Medical College.—R.	"	94	...	19	...	32	30	...	...
Barnes' Medical College.—R.	575,238	442	43	116	9	32	32	...	...
Marion Sims Beaumont College of Medicine.—R.	"	407	...	93	...	99	32	...	...
St. Louis College of Physicians and Surgeons.—R.	"	250	...	47	...	53	30	...	...
American Medical College.—E.	"	76	...	12	...	17	30	...	...
Homeopathic Medical College of Missouri.—H.	"	50	7	9	1	31	28	...	...
Medical Department, Washington University.—R.	"	279	...	63	...	61	35	...	...
University of the State of Missouri.—R.	5,651	79	4	10	...	33	38	...	...
NEBRASKA								79	386
University of Nebraska College of Medicine.—R.	102,555	140	10	30	...	60	35	...	...
John A. Creighton Medical College.—R.	"	151	2	27	...	50	34	...	...
Lincoln Medical College of Cotner University.—E.	40,169	75	8	18	4	28	31	...	...
NEW HAMPSHIRE								13	68
Dartmouth Medical College.—R.	1,884	68	...	13	...	29	40	...	...
NEW YORK								504	2,575
Albany Medical College.—R.	100,000	173	...	41	...	62	32	...	...
College of Physicians and Surgeons.—R.	3,437,202	691	...	174	...	125	34	...	...
Cornell University Medical College.—R.	"	323	37	50	5	145	37	...	...
Eclectic Medical College.—E.	"	77	18	5	3	33	34	...	...
Long Island College Hospital.—R.	"	389	...	47	...	95	35	...	...
New York Homeopathic Medical College and Hospital.—H.	"	118	...	28	...	71	31	...	...
New York Medical College and Hospital for Women.—H.	"	...	33	...	5	41	31	...	...
University and Bellevue Hospital Medical College.—R.	"	342	...	61	...	107	36	...	...
Syracuse University College of Medicine.—R.	108,374	124	7	30	1	49	35	...	...
University of Buffalo, Medical Department.—R.	352,387	231	12	51	3	82	31	...	...
†Medical Department, Fordham College, New York.—R.	...	...	...	...	...	...	...	...	...
NORTH CAROLINA								42	299
Leonard Medical School.—R.	13,643	125	...	21	...	11	28	...	...
Wake Forest School of Medicine.—R.	823	18	...	...	...	10	39	...	...
North Carolina Medical College.—R.	904	83	1	17	...	21	35	...	...
Medical Department, University of North Carolina.—R.	13,643	72	...	4	...	29	38	...	...
OHIO	381,768	88	...	31	...	44	37	...	985
Western Reserve University Medical College.—R.	381,768	88	...	31	...	44	37	...	...
Cleveland College of Physicians and Surgeons.—R.	"	70	5	19	...	63	32	...	...
Cleveland Homeopathic Medical College.—H.	"	76	9	23	2	73	33	...	...
Eclectic Medical Institute.—E.	325,902	133	9	26	1	23	30	...	...
Medical College of Ohio.—R.	"	145	...	46	...	54	36	...	...
Pulte Medical College.—H.	"	20	2	7	...	35	31	...	...
Miami Medical College.—R.	"	92	11	22	5	60	35	...	...
Ohio Medical University.—R.	125,560	161	7	38	3	35	32	...	...
Starling Medical College.—R.	"	124	...	33	...	36	33	...	...
Toledo Medical College.—R.	131,822	32	1	7	...	36	33	...	...
OKLAHOMA								...	9
University of Oklahoma, Norman.	3,682	9	...	...	...	4	36	...	...
OREGON								24	138
University of Oregon Medical Department.—R.	125,000	85	11	14	2	28	30	...	...
Medical Department, Willamette University.—R.	10,000	38	4	7	1	16	26	...	...
PENNSYLVANIA								493	2,300
Temple College of Philadelphia, Dept. of Medicine.—R.	1,293,697	54	9	2	...	40	39	...	...
University of Pennsylvania Department of Medicine.—R.	"	472	...	96	...	122	38	...	...
Hahnemann Medical College and Hospital.—H.	"	201	...	66	...	56	34	...	...
Jefferson Medical College.—R.	"	732	...	165	...	109	35	...	...
Woman's Medical College of Pennsylvania.—R.	"	...	159	...	43	48	34	...	...
Medico Chirurgical College of Philadelphia.—R.	"	414	...	70	...	82	35	...	...
Western Pennsylvania Medical College.—R.	321,616	257	2	50	1	102	35	...	...
PHILIPPINE ISLANDS								...	...
‡San Tomaso University, Manila.—R.	150,000	...	...	...	...	...	...	...	...
PORTO RICO								...	...
‡Medical Department Univ. of Porto Rico, San Juan.—R.	...	...	...	...	...	...	...	...	...
SOUTH CAROLINA								23	91
Medical College of the State of South Carolina.—R.	55,807	90	1	23	...	19	26	...	...
TENNESSEE								398	2,028
Tennessee Medical College.—R.	32,637	86	...	10	...	20	30	...	...
Knoxville Medical College.—R.	"	30	...	8	...	21	26	...	...
Medical Department of University of Nashville.—R.	80,865	301	...	41	...	27	39	...	...
Vanderbilt University Medical Department.—R.	"	168	...	34	...	36	30	...	...
University of Tennessee, Medical Department.—R.	"	154	...	30	...	28	30	...	...
Meharry Medical College.—R.	"	275	12	54	3	21	26	...	...
Memphis Hospital Medical College.—R.	102,320	566	...	153	...	28	30	...	...
University of the South.—R.	1,200	148	...	24	...	32	29	...	...
Chattanooga National Medical College.—R.	30,154	9	...	1	...	19	30	...	...
Chattanooga Medical College.—R.	"	249	3	36	1	28	27	...	...
University of West Tennessee, Medical Department.—R.	15,000	27	...	3	...	10	30	...	...
TEXAS								123	773
Medical Department Fort Worth University.—R.	35,000	105	1	8	1	32	27	...	...
University of Texas Department of Medicine.—R.	37,789	166	6	22	1	26	34	...	...
Baylor University College of Medicine.—R.	55,000	66	2	12	...	30	26	...	...
Physio-Medical College of Texas.—P.M.	"	21	...	...	...	28	26	...	...
Dallas Medical College.—R.	"	205	7	28	...	30	26	...	...
Gate City Medical College, Texarkana.—R.	5,000	83	1	25	1	20	30	...	...
Southwestern University Medical College, Dallas.—R.	55,000	35	3	11	...	39	26	...	...
Bell Medical College, Dallas.—R.	"	69	3	13	1	15	26	...	...
VERMONT								55	225
University of Vermont Medical Department.—R.	20,000	225	...	55	...	42	31	...	...
VIRGINIA								97	571
Medical College of Virginia.—R.	85,050	219	...	41	...	43	33	...	...
University College of Medicine.—R.	"	188	...	25	...	44	33	...	...
University of Virginia Department of Medicine.—R.	6,449	164	...	31	...	21	38	...	...
WEST VIRGINIA								0	23
University of West Virginia, Morgantown.	2,100	23	...	...	...	8	38	...	...
WISCONSIN								51	234
Milwaukee Medical College.—R.	300,000	147	1	22	...	59	35	...	...
Wisconsin College of Physicians and Surgeons.—R.	"	83	3	28	1	50	34	...	...

*Not in session. †Not yet organized completely. ‡Can not obtain any information.

NAME OF COLLEGE.	Alabama, 533.	Arizona, 7.	Arkansas, 443.	California, 526.	Colorado, 183.	Connecticut, 300.	Delaware, 50.	Dist. Columb., 158	Florida, 117.	Georgia, 479.	Idaho, 34.	Illinois, 2,258.	Indian Ter., 155.	Indiana, 940.	Iowa, 1,092.	Kansas, 618.	Kentucky, 616.	Louisiana, 482.	Maine, 208.	Maryland, 450.	Mass., 1,125.
Birmingham Medical College.—R.	94	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Medical College of Alabama.—R.	146	...	...	...	...	...	...	...	25	...	...	...	...	...	...	...	...	...	...	...	...
Medical, Department Arkansas University.—R.	...	...	93	...	...	...	...	...	...	...	...	...	10	...	...	...	...	3	...	...	...
Cooper Medical College.—R.	1	...	...	104	1	...	...	...	...	...	1	4	...	2	7	4	...	...	12	...	...
Medical Dept. University of California.—R.	...	...	...	106	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
California Medical College.—E.	...	...	...	47	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hahnemann Med. College of the Pacific.—H.	...	...	...	33	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Col. of Physicians and Surgeons, San F.—R.	...	...	...	53	...	1	...	...	...	...	...	5	...	5	6	1	...	1	...	...	1
Oakland College of Med. and Surgery.—R.	...	...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
College of Med., Univ. of So. California.—R.	...	...	...	72	2	...	...	...	...	...	...	5	...	3	2	1	...	...	...	...	...
Denver and Gross College of Medicine.—R.	2	...	...	...	69	2	...	...	...	...	1	5	...	2	32	3	1	...	...	1	1
Denver Homeopathic College.—H.	...	...	1	1	17	...	...	...	...	...	1	...	...	1	1	1	...	...	...	...	1
Colorado School of Medicine.—R.	...	...	...	...	32	...	...	...	...	...	...	1	...	...	3	...	...	...	3	...	...
Yale University, Medical Dept.—R.	...	...	...	...	...	108	...	1	...	1	...	...	...	...	1	1	...	...	...	...	12
Columbian Univ., Dept. of Medicine.—R.	1	...	1	2	...	3	...	57	1	5	1	14	...	6	2	2	5	4	3	17	4
Georgetown Univ. School of Medicine.—R.	1	...	...	...	1	3	1	37	...	...	...	1	...	2	...	1	1	...	...	4	3
Howard University, Medical Dept.—R.	3	...	2	...	...	...	...	33	5	9	...	2	...	3	...	3	2	1	...	4	2
National University, Medical Dept.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Atlanta Col. of Phys. and Surgeons.—R.	21	...	...	...	...	...	...	...	14	158	...	...	1	...	...	...	1	...	...	...	...
Georgia Col. of Eclectic Med. and Surg.—E.	3	...	1	...	...	...	...	...	1	48	...	...	...	...	...	...	...	...	...	...	...
Medical College of Georgia.—R.	...	...	...	...	2	1	...	...	4	91	...	...	...	...	...	...	...	...	...	...	1
American College of Med. and Surgery.—E.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
American Medical Missionary College.—R.	...	...	6	...	...	...	...	...	...	...	...	...	...	1	12	1	...	...	1	...	1
Bennett Col. of Eclectic Med. and Surg.—E.	...	...	1	...	...	...	...	...	...	...	1	65	...	7	4	...	...	...	...	...	...
Chicago Homeopathic Medical College.—H.	...	...	...	2	...	...	...	...	...	...	...	45	...	12	14	8	2	...	...	...	...
College of Medicine and Surgery.—Ph.M.	1	...	2	3	2	1	...	...	...	...	...	35	...	5	2	...	...	1	...	2	1
College of Phys. and Surgeons, Chicago.—R.	...	...	3	5	2	2	...	...	...	...	1	372	1	32	35	11	2	2	...	...	1
Hahnemann Med. College and Hospital.—H.	...	...	1	2	...	1	...	...	1	...	1	49	...	3	17	7	...	...	...	...	1
National Medical University	1	...	1	1	3	...	...	...	...	1	1	154	1	5	11	3	2	1	1	...	1
Hering Medical College.—H.	...	...	...	5	...	...	...	...	...	...	...	38	...	2	3	7	...	...	...	...	...
Illinois Medical College.—R.	1	...	3	1	...	...	...	...	1	1	1	86	1	45	7	1	2	4	1	...	...
Jenner Medical College.—R.	1	...	1	1	...	...	...	...	1	...	...	83	...	4	3	2	2	1	...	...	...
Dearborn Medical College	...	...	...	...	...	...	...	...	...	...	...	134	...	...	...	...	...	...	...	...	...
Northwestern University Med. School.—R.	...	...	1	2	1	...	...	...	...	...	5	243	...	22	88	9	1	3	...	1	...
Rush Medical College.—R.	4	3	18	20	10	3	...	2	...	3	4	322	2	80	103	31	9	3	2	...	5
Central Col. of Physicians and Surgeons.—R.	...	...	...	...	...	...	...	...	...	...	...	6	...	111	1	1	...	...	...	...	...
Indiana University School of Medicine	...	...	...	...	...	...	...	...	...	...	...	1	...	17	...	...	...	...	...	...	...
Medical College of Indiana.—R.	...	...	...	...	...	...	...	...	...	...	...	20	...	264	...	1	...	...	...	...	...
Physio-Medical College of Indiana.—Ph.M.	...	...	...	...	...	...	...	...	...	...	...	10	...	13	1	...	...	...	...	...	...
Eclectic Medical College of Indiana.—E.	...	...	...	...	...	...	...	...	1	...	...	...	...	28	...	...	...	...	...	...	...
Fort Wayne College of Medicine.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	34	...	...	...	...	...	...	...
Drake University, College of Medicine	...	...	...	...	...	...	...	...	...	...	...	3	...	...	55	2	...	...	...	...	...
Keokuk Medical Col. of Phys. and Surgs.—R.	...	...	...	1	4	1	...	...	...	...	...	59	1	...	104	23	...	...	...	...	...
Sioux City College of Medicine.—R.	...	...	...	...	...	...	...	...	...	...	...	1	...	...	45	1	...	...	...	...	...
State Uni. of Iowa Medical Dept.—R.	...	...	...	1	...	...	...	...	...	...	...	10	...	...	128	...	...	...	...	...	1
State Univ. of Iowa, Homeo. Med. Dept.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	34	...	...	...	...	...	...
Col. of Phys. and Surgs. of Kansas City.—R.	...	...	2	...	...	...	...	...	...	...	...	...	2	1	...	56	...	...	...	...	...
Kansas Medical College.—R.	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	91	...	...	...	...	...
School of Medicine, University of Kansas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	22	...	...	...	...	...
Hospital College of Medicine.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kentucky School of Medicine.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Louisville Medical College.—R.	9	...	10	2	2	...	...	...	4	5	...	1	5	21	2	14	50	7	...	...	...
Louisville National Med. College.—R.	1	...	...	...	...	...	...	...	...	...	...	1	1	3	...	...	28	...	...	...	...
Kentucky University, Medical Dept.—R.	5	...	5	...	...	2	...	...	1	4	...	4	1	52	1	2	174	7	1	...	1
Medical Dept., University of Louisville.—R.	...	...	2	...	...	...	...	...	...	...	...	3	...	25	...	...	114	5	...	...	...
Southwestern Homeopathic Med. College.—H.	...	...	...	...	...	...	...	...	...	...	...	1	...	5	...	...	14	...	...	...	...
Flint Med. College of New Orleans Univ.	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	29	...	...	...
Tulane University, Medical Dept.—R.	32	...	21	...	...	...	...	...	9	7	...	1	2	1	...	...	...	209	...	...	...
Medical School of Maine, Bowdoin Col.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	88	...	10
Baltimore Medical College.—R.	1	...	1	2	...	18	...	5	1	...	...	1	...	...	...	...	...	1	13	67	69
Baltimore Univ. School of Medicine.—R.	...	...	...	...	...	2	...	...	1	32	...	...	...	...	...	...	...	1	1	6	6
Col. of Phys. and Surgs. of Baltimore.—R.	...	...	...	...	1	18	7	...	...	1	...	1	...	3	...	...	1	...	4	48	20
Maryland Medical College.—R.	12	...	...	1	...	3	17	...	12	19	...	...	...	...	...	...	...	4	4	34	12
Medical Dept., Johns Hopkins Univ.—R.	7	...	1	8	2	14	...	3	4	6	...	6	...	7	9	...	6	...	11	52	3
Southern Homeopathic Med. College.—H.	...	...	...	...	...	...	4	1	...	...	...	...	...	...	...	...	1	...	...	17	1
Univ. of Maryland, School of Medicine.—R.	...	...	1	...	...	2	4	22	4	15	...	...	...	...	...	...	2	1	1	143	6
Woman's Medical College of Baltimore.—R.	...	...	...	...	...	...	...	22	...	1	...	...	...	1	...	...	1	...	...	11	...
Boston University School of Medicine.—H.	...	...	...	...	...	32	...	...	1	...	...	...	...	...	...	...	...	...	3	1	71
College of Physicians and Surgeons.—R.	...	...	...	1	...	3	...	1	...	...	...	...	...	...	...	...	...	...	1	1	79
Harvard University Medical School.—R.	1	...	...	3	1	4	...	...	...	...	...	8	...	...	1	...	...	...	18	...	266
Tufts College Medical School.—R.	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	15	...	326
Detroit College of Medicine.—R.	...	...	...	...	...	...	...	1	...	...	1	...	...	...	2	...	1	...	...	...	1
Detroit Homeopathic Medical College.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Grand Rapids Medical College.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
Michigan College of Med. and Surgery.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Univ. of Mich. Dept. of Med. and Surg.—R.	2	...	...	1	1	1	...	...	2	3	1	22	1	15	11	3	1	...	...	...	3
Univ. of Mich. Homeopathic Med. Col.—H.	...	...	...	1	1	...	...	...	...	...	...	1	...	3	...	...	...	1	2	...	2
Col. of H. Med. and Surg., U. of Minn.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
College of Med. and Surg., Univ. of Minn.—R.	...	...	...	...	...	1	...	...	...	...	...	1	...	...	9	1	...	...	...	...	...
Medical Dept. of Hamline University.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Dept. University of Mississippi	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
American Medical College.—E.	...	...	6	...	...	...	...	...	...	...	1	10	...	...	2	1	1	1	...	...	...
Barnes Medical College.—R.	1	...	23	4	4	...	...	1	...	...	2	85	14	13	17	14	14	2	...	...	...
Central Medical College.—R.	...	...	...	...	1	...	...	...	...	...	1	...	1	...	1	10	...	...	...	...	...
Eclectic Medical University.—E.	...	...	1	1	1	...	...	...	...	...	...	...	1	...	...	25	...	...	...	...	...
Ensworth Medical College.—R.	...	...	...	...	...	...	...	...	...	...	...	1	...	...	6	10	...	...	...	...	...
Homeopathic Med. College of Missouri.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kansas City Hahnemann Med. College.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kansas City Medical College.—R.	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	70	...	...	...	...	...
Marion-Sims-Beaumont Col. of Medicine.—R.	...	1	7	2	3	...	...	...	...	1	1	134	1	3	16	18	3	2	...	...	1
Medical Dept., Washington University.—R.	1	...	13	...	3	...	...	...	...	...	4	66	6	2	3	7	1	2	...	...	...
Medico-Chirurgical College.—R.	...	...	3	...	1	...	...	...	...	...	1	1	1	...	2	30	...	...	...	...	...
St. Louis College of Phys. and Surgeons.—R.	...	...	9	...	2	...	...	...	...	...	...	70	3	5	14	4	10	...	...	...	...
University Med. College of Kansas City.—R.	...	...	1	2	1	...	...	...	...	...	...	1	4	...	5	78	...	...	...	...	...
Medical Dept., University of Missouri.—R.	1	...	2	1	...	...	...	...	...	...	...	4	...	2	3	3	1	...	...	...	...
Woman's Medical College.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
John A. Creighton Medical College.—R.	...	...	...	...	...	...	...	...	...	...	1	1	...	...	29	2	...	...	...	...	...
Lincoln Medical College of Cotner Univ.—E.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	10	...	...	...	...	...
Univ. of Nebraska College of Medicine	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20	1	...	...	...	...	20
Dartmouth Medical College.—R.	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	5	...	6
Albany Medical College.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...



Maryland, 450.
Mass., 1,125.
Michigan, 811.
Minnesota, 453.
Mississippi, 541.
Missouri, 1,208.
Montana, 38.
Nebraska, 434.
New Hamp., 120.
New Jersey, 508.
New Mexico, 19.
New York, 2,439.
Nevada, 10.
N. Carolina, 416.
N. Dakota, 67.
Ohio, 1,120.
Oklahoma, 105.
Oregon, 150.
Penna., 2,077.
Rh. Island, 114.
S. Carolina, 242.
So. Dakota, 92.
Tennessee, 652.
Texas, 1,153.
Utah, 67.
Vermont, 160.
Virginia, 523.
Washington, 105.
West Va., 329.
Wisconsin, 561.
Wyoming, 13.
Canada, 210.
Foreign, 356.
Total, 25,777.

NAME OF COLLEGE.	Alabama, 533.	Arizona, 7.	Arkansas, 443.	California, 526.	Colorado, 183.	Connecticut, 300.	Delaware, 50.	Dist. Columb., 158.	Florida, 117.	Georgia, 479.	Idaho, 34.	Illinois, 2,258.	Indian Ter., 155.	Indiana, 940.	Iowa, 1,002.	Kansas, 618.	Kentucky, 616.	Louisiana, 482.	Maine, 208.	Maryland, 450.	Mass., 1,125.
College of Physicians and Surgeons.—R.	4	...	2	2	2	24	1	...	3	2	...	233	...	3	...	1	3	...	4	1	24
Cornell University Medical College.—R.	2	...	...	1	...	6	...	...	...	...	...	2	...	1	...	...	...	1	2	...	5
Eclectic Medical College.—E.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Long Island College Hospital.—R.	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
N. Y. Homeopathic Med. Col. and Hosp.—H.	...	...	...	...	...	8	...	2	...	...	...	...	...	1	...	...	...	...	...	...	2
N. Y. Med. Col. and Hosp. for Women.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syracuse University Col. of Medicine.—R.	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
University and Bellevue Hosp. Med. College.	...	...	...	...	...	12	...	...	1	2	...	2	...	3	1	1	2	...	...	1	14
University of Buffalo, Medical Dept.—R.	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Leonard Medical School.—R.	7	...	1	...	...	...	...	2	2	3	...	1	...	...	...	...	...	...	...	...	...
Medical Dept., University of North Carolina.	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
North Carolina Medical College.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Wake Forest School of Medicine	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Cleveland College of Phys. and Surgeons.—R.	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...
Cleveland Homeopathic Med. College.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eclectic Medical Institute.—E.	...	...	5	1	1	...	...	...	1	1	...	9	1	13	...	...	17	...	...	...	...
Medical College of Ohio.—R.	1	...	...	...	...	...	...	...	1	...	...	4	...	8	...	...	21	...	...	...	...
Miami Medical College.—R.	1	...	...	1	...	...	...	...	1	...	...	...	...	6	...	...	10	...	...	...	...
Ohio Medical University.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	...	...	...	2
Pulte Medical College.—H.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Starling Medical College.—R.	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...
Toledo Medical College.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Western Reserve University Med. Col.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	1
University of Oklahoma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Dept., Willamette University.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
University of Oregon Medical Dept.—R.	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Hahnemann Med. College and Hospital.—H.	1	...	...	1	...	2	4	2	...	...	...	1	...	1	...	...	...	1	1	3	3
Jefferson Medical College.—R.	3	...	...	4	1	8	12	...	3	6	2	8	...	11	...	1	2	1	3	6	32
Medico-Chirurgical Col. of Philadelphia.—R.	...	...	2	1	...	4	8	...	1	1	...	1	...	1	1	...	3	1	2	1	4
Temple Col. of Philadelphia., Dept. of Med.	...	...	...	...	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...
University of Pa. Dept. of Medicine.—R.	4	...	...	2	3	4	3	3	2	1	...	5	...	6	2	1	6	...	5	1	8
Western Pennsylvania Med. College.—R.	...	1	...	1	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Woman's Medical Col. of Pennsylvania.—R.	...	...	...	1	...	3	2	1	...	...	1	3	...	1	3	3	2	1	2	...	12
Medical College of South Carolina.—R.	...	...	...	...	...	...	...	...	3	...	...	...	...	...	1	...	...	...	...	...	...
Chattanooga National Med. College.—R.	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Chattanooga Medical College.—R.	49	...	5	4	1	1	...	...	2	5	...	4	2	...	1	7	2	...	1	1	...
Knoxville Medical College.—R.	1	...	4	...	...	...	...	...	...	3	...	1	...	...	...	3	...	...	...	...	...
Medical Dept. of Univ. of Nashville.—R.	28	...	20	...	...	...	...	...	1	3	...	1	...	...	...	14	34	...	...	...	...
Meharry Medical College.—R.	17	...	26	...	...	...	...	...	21	14	...	3	1	1	...	5	16	12	...	...	...
Memphis Hospital Medical College.—R.	22	...	92	...	...	...	...	...	...	3	...	...	23	1	1	3	1	86	...	...	...
Sewanee Medical College.—R.	13	...	3	...	...	...	...	...	3	11	...	1	1	...	...	1	...	19	...	...	...
Tennessee Medical College.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	...	...	...	...
Univ. of West Tennessee, Medical Dept.—R.	1	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
University of Tennessee Medical Dept.	7	...	5	1	...	1	...	...	1	...	...	2	3	...	...	...	16	3	...	...	...
Vanderbilt University Medical Dept.—R.	15	...	4	...	...	1	...	...	2	5	...	2	1	...	...	...	13	3	...	1	...
Baylor University College of Medicine	...	...	...	...	...	...	...	...	...	...	...	1	6	...	...	...	...	2	...	...	...
Bell Medical College	...	...	3	...	...	...	...	...	...	...	...	1	5	...	...	1	...	...	...	...	...
Dallas Medical College.	...	2	4	2	...	...	...	...	...	...	...	...	28	...	1	12	...	8	...	...	...
Medical Dept. Fort Worth University.—R.	...	...	3	...	1	...	...	...	...	...	...	1	4	1	1	...	...	3	...	...	...
Gate City Medical College	1	...	23	...	...	...	...	...	...	...	...	...	14	1	...	...	...	7	...	...	...
Physio-Medical College of Texas.	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Southwestern University Medical College.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Univ. of Texas Dept. of Medicine.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Univ. of Vermont Medical Dept.—R.	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	7	...	27
Medical College of Virginia.—R.	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2
University College of Medicine.—R.	1	...	...	...	...	...	...	...	5	1	...	...	...	...	...	...	...	...	...	...	1
University of Virginia Dept. of Medicine.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
West Virginia University	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Milwaukee Medical College.—R.	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Wisconsin College of Phys. and Surgs.—R.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...

The Public Service.

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Aug. 6, 1904:

Kiersted, H. S., asst.-surgeon, left Fort Myer, Va., with Fourth Battery Field Artillery and Troop E, Fifteenth Cavalry en route to Harper's Ferry, W. Va.

Baily, Howard H., asst.-surgeon, reported for duty at Plattsburg Barracks, N. Y.

Stephenson, William, and Kendall, Wm. P., surgeons, Edger, Benj. J., Rockhill, E. P., Winn, Robt. N., Truby, Albert E., Baker, F. C., and Rand, Irving W., asst.-surgeons, detailed for duty with troops on field exercises at the Rancho del Encinal, San Luis, Cal., in pursuance of G. O. 27 C. S., Department of California.

Godfrey, G. C. M., asst.-surgeon, relieved from duty at Fort Apache, Arizona Territory, to take effect on Sept. 1, 1904, and will proceed to New York City, N. Y., and assume the duties of attending surgeon and examiner of recruits and medical superintendent Army transports.

McCulloch, C. C., Jr., asst.-surgeon, on being relieved at New York City by Capt. Godfrey, asst.-surgeon, will proceed to Fort Hancock, N. J., and report to the commanding officer of that post for duty, to relieve Capt. B. H. Dutcher, asst.-surgeon, U. S. Army.

Dutcher, Basil H., asst.-surgeon, on being relieved at Fort Hancock, N. J., by Capt. McCulloch, Jr., asst. surgeon, will proceed to Fort Apache, Ariz., and report to the commanding officer of that post for duty.

Geer, Charles C., asst.-surgeon, reports from sick in U. S. Army General Hospital, Washington Barracks, D. C., to sick leave of absence for three months.

Bevans, Jas. L., asst.-surgeon, granted twenty days' leave of absence.

Gardner, Edwin F., deputy surgeon general, retired from active service this date as lieutenant colonel.

Appel, Daniel M., deputy surgeon general, promoted deputy surgeon general with rank of lieutenant colonel from Aug. 3, 1904.

Winter, Francis A., surgeon, promoted surgeon, U. S. Army, with rank of major to date from Aug. 3, 1904.

Jean, Geo. W., asst.-surgeon, reported for temporary duty at Fort Wadsworth, N. Y., left from temporary duty at Fort Jay N. Y., same date.

Bosley, Jno. R., asst.-surgeon, reported for duty at Fort Egbert, Alaska.

Raymond, Thos. N., surgeon, detailed to represent Medical Department of the Army at meeting of American Roentgen Ray Society, St. Louis, Mo., Sept. 9 to 13, 1904.

Foster, Douglas E., contract dental surgeon, ordered to Fort Monroe, Va., for two months' duty.

Brown, Henry D., contract surgeon, returned July 23 to duty at his proper station, Fort Ward, Washington, from temporary duty at Fort Casey, Washington.

White, J. Samuel, contract surgeon, returned July 28 to duty at his proper station, Fort Snelling, Minn., from temporary duty at Fort Keogh, Mont.

Woods, Oscar W., contract surgeon, returned July 25 to duty at his proper station, Vancouver Barracks, Wash., from temporary duty at Fort Stevens, Wash.

Decker, George M., contract dental surgeon, departed July 29 from Fort Logan, Colo., for his home at Owego, N. Y.

Slater, Ernest F., contract surgeon, returned to duty July 30 at Fort Hancock, N. J., from leave of absence.

Halliday, Francis A., contract surgeon, ordered from Fort McPherson, Ga., to Fort Screven, Ga., for temporary duty.

Stearns, Charles H., contract surgeon, ordered from Fort Monroe, Va., to Fort Washington, Md., for temporary duty.

Jones, John F., contract surgeon, ordered from Fort Totten, N. Y., to Fort Terry, N. Y., for temporary duty.

Corbusier, Harold D., contract surgeon, ordered from Fort Mansfield, R. I., to Fort Greble, R. I., for temporary duty.

Hess, John H., contract examining and supervising D. S., ordered from West Point, N. Y., to Watervliet Arsenal, N. Y., for temporary duty and return.

Michigan, 811	Minnesota, 453	Mississippi, 641	Missouri, 1,208	Montana, 38	Nebraska, 434	New Hamp., 120	New Jersey, 508	New Mexico, 19	New York, 2,439	Nevada, 10	N. Carolina, 416	N. Dakota, 67	Ohio, 1,120	Oklahoma, 105	Oregon, 150	Penna., 2,077	Rh. Island, 114	S. Carolina, 242	So. Dakota, 92	Tennessee, 652	Texas, 1,153	Utah, 67	Vermont, 160	Virginia, 523	Washington, 195	West Va., 329	Wisconsin, 561	Wyoming, 13	Canada, 210	Foreign, 356	Total, 25,777
...	...	2	2	2	...	3	108	...	433	...	4	...	4	...	1	12	11	2	...	1	5	...	3	2	...	...	12	1	3	11	691
...	...	1	1	...	...	1	27	...	284	...	...	...	5	...	2	12	3	...	...	...	...	...	1	...	1	...	1	...	5	6	360
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...	...	...	...	...	...	...	5	...	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	33
...	...	...	...	...	...	...	...	...	118	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	4	131
1	...	...	1	...	...	3	50	...	204	...	1	...	6	1	...	11	1	...	...	3	2	4	1	1	6	1	...	2	4	6	342
...	...	...	...	...	...	...	...	...	229	...	...	...	2	...	...	8	...	...	1	...	...	...	...	...	...	...	...	...	2	...	243
1	...	3	1	...	...	...	2	...	4	...	39	...	...	...	...	7	...	12	...	...	1	...	...	28	...	3	...	...	...	8	125
...	...	...	...	...	...	...	...	...	3	...	62	...	1	...	...	3	...	...	...	...	...	...	...	1	...	...	...	...	...	...	72
...	...	1	...	...	...	...	...	...	...	...	74	...	...	...	...	...	...	3	...	...	...	...	...	33	...	...	...	...	...	1	84
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1	2	...	2	...	1	2	20	...	19	...	3	...	18	1	...	300	3	...	...	2	2	...	2	3	3	6	3	...	2	10	472
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1	...	5	...	...	1	2	10	...	5	...	2	...	2	...	...	75	...	12	...	1	3	...	1	2	1	...	...	...	1	9	159
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1	...	35	13	...	...	...	...	...	3	...	2	...	3	3	...	1	...	13	...	56	32	...	...	1	...	2	...	...	...	7	287
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Corbusier, Harold D., contract surgeon, returned August 2 to duty at Fort Mansfield, R. I., from leave of absence.

Tigner, Edwin P., contract dental surgeon, ordered from Fort Riley, Kan., to Fort Robinson, Neb., for one month's duty, thence to Fort Des Moines, Iowa, for one month's duty, then to return to Fort Riley.

Foster, Douglas E., contract dental surgeon, returned August 1 to duty at Fort Hancock, N. J., and August 3 proceeded to Fort Monroe, Va., for two months' duty.

Hussey, Samuel W., contract dental surgeon, returned August 1 to Fort Snelling, Minn., having completed an eight months' itinerary of the posts in the Department of Dakota.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Aug. 5, 1904:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, July 23-30, 1 case.
Florida: At large, July 23-30, 13 cases.
Illinois: July 23-30, Chicago, 5 cases; Danville, 1 case, Springfield, 3 cases.
Iowa: Clinton, July 16-30, 4 cases.
Louisiana: July 23-30, Baton Rouge, 3 cases; New Orleans, 1 case, traced to importation.
Michigan: At 78 localities, July 16-23, present.
Missouri: St. Louis, July 17-30, 2 cases.
Nebraska: Omaha, July 23-30, 2 cases.
New Jersey: Jersey City, July 17-24, 2 cases.
New York: New York City, July 23-30, 1 case.
Pennsylvania: Johnstown, July 23-30, 1 case.
Tennessee: Nashville, July 23-30, 1 case.
Washington: Tacoma, July 18-25, 2 cases.
Wisconsin: Milwaukee, July 25-30, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, July 2-16, 8 cases; Vienna, July 9-16, 1 death.
Brazil: Bahia, July 2-9, 8 cases; Rio de Janeiro, June 12-26, 304 cases, 124 deaths.
China: Hongkong, June 11-18, 1 case, 1 death.
France: Paris, June 9-16, 9 cases, 2 deaths.
Great Britain: Leeds, July 16-23, 6 cases; July 2-9, Newcastle-on-Tyne, 23 cases; Sheffield, 2 cases; Nottingham, July 9-25, 20 cases.
India: Calcutta, June 18-July 2, 2 deaths.
Italy: Palermo, July 2-16, 11 cases, 2 deaths.
Mexico: City of Mexico, July 10-17, 2 cases, 3 deaths.
Peru: Arequipa, June 18, epidemic.
Russia: Moscow, June 25-July 9, 29 cases, 7 deaths; Odessa, July 9-16, 1 case; St. Petersburg, July 2-16, 9 cases, 2 deaths; Warsaw, 34 deaths.
Spain: Barcelona, July 10-20, 9 deaths.
Turkey: Beirut, July 9-16, present; Constantinople, July 3-17, 9 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, June 12-26, 6 cases, 3 deaths.
Costa Rica: Limon, July 17-23, 1 case, 1 death.
Ecuador: Guayaquil, June 29-July 13, 13 deaths.
Mexico: Ceatzacoalcos, July 9-16, 1 death; July 10-23, Merida, 9 cases; Tehuantepec, 10 cases, 7 deaths; Vera Cruz, July 16-23, 3 cases.

CHOLERA.

China: Hongkong, June 11-18, 3 cases, 3 deaths.
India: Calcutta, June 18-July 2, 39 deaths.
Persia: Teheran, June 25-July 9, 300 deaths daily.
Turkey in Asia: June 28, 481 cases, 852 deaths; Bahrein Islands, May 1-June 1, 1,500 deaths.

PLAGUE.

Africa: Cape Colony, June 18-25, 1 case, 1 death; Durban, May 28-June 4, 2 deaths; Johannesburg, June 5-12, 1 case.
Brazil: Bahia, July 2-9, 5 cases, 2 deaths; Rio de Janeiro, June 12-26, 3 cases, 3 deaths.
China: Amoy, June 4-25, 45 deaths, estimated; Canton and vicinity, June 2, increasing; Hongkong, June 11-18, 53 cases, 52 deaths.
Egypt: June 18-25, 36 cases, 16 deaths.
Formosa: June 11-25, 178 cases, 129 deaths.
India: Calcutta, June 18-July 2, 31 deaths; Karachi, June 26-July 3, 1 case, 1 death.

Society Proceedings.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Portland, Ore., July 11-14, 1905.

Academy of Ophthalmology and Otolaryngology, Denver, August 24-26.
Medical Society of the Missouri Valley, Council Bluffs, Iowa, August 25.
Oregon State Medical Association, Portland, August 30-31.
Wyoming State Medical Society, Rawlins, September 13.
American Electro-Therapeutic Assn., St. Louis, September 13-15.
American Association of Obstetricians and Gynecologists, St. Louis, September 13-16.
Medical Society of the State of Pennsylvania, Pittsburg, September 27-29.

BRITISH MEDICAL ASSOCIATION.

Seventy-Second Annual Meeting, held at Oxford, July 26-30, 1904.

(From Our British Correspondent.)

The President, Dr. Collier, Oxford, in the Chair.

A Large and Successful Meeting.

About 1,600 members attended and were accompanied by members of their families and guests to the number of 1,000. The authorities of the ancient university freely placed at the disposal of the association their ample buildings, and this large number was provided for without crowding. All the official arrangements were excellent in design and execution, and nothing seemed to be left undone to provide for the comfort of the members and guests and the success of the meeting.

Opening Exercises—The Association Declared Prosperous.

As usual the meeting opened with a religious service in the cathedral, where the master of University College, the Rev. Dr. Bright (appropriately enough a son of the great Bright, whose name is often used in connection with diseases of the kidneys) preached the sermon. The retiring president, Dr. Griffiths, in his valedictory address, said that the association had now come to the close of the first year of the new constitution. The association is divided into local "divisions," every member of which has a voice in their management, and through their "representatives" in the policy of the whole association. There are now 300 divisions which cover the United Kingdom and its colonies. The association has as a result greater power of promoting the interests of the profession, greater power to improve the public health, and greater power of influencing parliament.

The financial position of the association is most satisfactory, the excess of income over expenditure for 1903 amounting to $27,000. Of the foreign distinguished guests of the association the Americans greatly predominated and amounted to about half the entire number. They included Professors Osler, Deaver, Gilchrist, MacCallum, Rodman, Tyson, and Dr. George H. Simmons.

Conferring of Degrees.

An interesting and quaint ceremony was performed in the famous Sheldonian Theater—the conferment by Oxford University of the degree of D.Sc. *honoris causa* on eminent members of the association and guests, namely: Prof. Clifford Allbutt, Mr. Andrew Clark (chairman of the council of the association), Dr. Griffiths (the retiring president), Mr. Jonathan Hutchinson, Sir William MacEwen, Sir Patrick Manson, Sir John Moore and Professor Osler.

Medical Defense.

In the afternoons the representatives of the various local branches of the association waged keen discussions on many thorny subjects of medical politics. The subject of medical defense attracted great interest, and has been before the association for some time. At the last annual meeting, held at Swansea the council appointed a committee to consider whether the general or individual defense of its members should be undertaken by the British Medical Association and to draw up a scheme. The general feeling of the meeting was strongly in favor of medical defense, but it was thought that it should be optional and not made compulsory for the members of the association to join in it. After a heated discussion it was resolved by a large majority to refer back the scheme to the original committee for reconsideration, with instructions to provide for amalgamation with the existing defense societies, and to submit the new scheme to the divisions of the association before the next annual meeting of the representatives.

(To be continued.)

ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

Minutes of the Fourteenth Annual Meeting, held at Atlantic City, N. J., June 6, 1904.

(Continued from page 420.)

Report of Secretary-Treasurer.

The report of the Secretary-Treasurer was called for and read, as follows:

To the President and Delegates:—When I was honored with this position, I realized and appreciated fully all that the Association expected of its Secretary, and, therefore, I entered on the duties of this office fully cognizant of what lay before me, and determined to do all I could to further the interests of this Association in its effort to elevate medical education.

On taking up the work I found that the records were scanty and incomplete, so that it was impossible to glean from them anything that would have aided me in my work. My first effort was to make the Secretary's office a bureau of information for the members of the Association. With this end in view I set about collecting the proceedings of all the meetings held since the organization of the Association in 1891. I succeeded in procuring all of the transactions, with the exception of those of the meetings held in 1893, 1894 and 1895. I was unable to obtain these records from anyone, and, thus far, I do not know who were the officers of the Association during those years, nor what work was done. I shall be glad to receive this information from such members as are in a position to supply it.

ASSOCIATE AND HONORARY MEMBERS.

Permit me in this connection to call your attention to Article iv, Section 1, which empowers the Association to elect associate and honorary members. Associate members shall consist of former representatives and representatives of postgraduate medical schools, and members of state boards of medical examiners. Distinguished teachers of medicine and surgery may be elected to honorary membership. The following were elected to honorary membership in the Association in 1895, at Baltimore: H. P. Bowditch, George M. Sternberg, J. M. Da Costa, Levi Cooper Lane, Hunter McGuire, T. Gaillard Thomas.

It appears that the Secretary's office, apparently, has not had the broad scope it should have, nor have the members made use of it during the intervals between the meetings. In order to remedy this defect, I have endeavored to keep in touch with all the colleges during the past year, and also, but to a less extent, with colleges who are not members, in order that I would be in a position to furnish any information that might be desired. It has been a very difficult and arduous task, largely by reason of the fact that it was a new department. I found, much to my surprise, that few of the members were aware of the existence of this office, judging from the little use there was made of it, but every assistance was given me in my work, many courtesies were shown me by the colleges and for this I wish to express my gratitude and appreciation.

Necessarily, the correspondence has been unusually heavy during the year, but I believe that it has been productive of much good. Many letters have been received from prospective medical students inquiring as to the names of the colleges in certain cities that are members of the Association, for the reason that they wished to attend a college that was a member in preference to attending one that was not. Many inquiries were also received from colleges, both members and non-members, with reference to the laws of the Association and the work done by it. All this, I take it, is an indication that this Association is recognized as a potent factor in medical education, and that its labors are appreciated by all.

COMMITTEE ON MEDICAL EDUCATION.

In this connection, permit me to suggest the appointment of a committee of one to confer with similar committees from the American Medical Association, the National Confederation of State Licensing and Examining Boards, the Southern Medical College Association and the national associations of the several

medical sects. The purpose of these committees is to further medical education by establishing a uniform standard of requirements for entrance to and graduation from medical schools. The appointment of such a committee will do much to harmonize the work done by these various associations.

As soon as the copies of the proceedings of the New Orleans meeting were delivered to me by THE JOURNAL of the American Medical Association, I forwarded one copy to each college in the United States, members and non-members, and an additional copy to each delegate present at that meeting. Colleges members of the Association also received a copy of the Constitution and By-Laws, which I compiled from previous proceedings and had printed, believing that it would assist the members in their work. This pamphlet also contained a list of the members of the Association, the rules of the Judicial Council and the recommendations submitted to the Association by the Committee on Uniformity of Records at the Saratoga meeting.

CORRECTION IN PROCEEDINGS OF LAST YEAR.

My attention has been called to an omission in the published transactions in the new Article iii, Section 5. The following line was dropped accidentally: "Annual course to have been of not less than seven months' duration." By referring to the copy of the former Secretary, I find that this line was omitted, although it appears in its proper place on page 17 of the transactions, and also in the Constitution.

CHANGES IN MEMBERSHIP.

During the year the following changes have taken place that concern the Association directly: The Jefferson Medical College of Philadelphia withdrew from membership in January of this year. The Barnes Medical College of St. Louis, Mo., was dropped from the membership roll because of non-payment of dues for the year 1903. Several notices were sent this college, as well as a personal letter to the secretary of the college, but all failed to elicit a reply. The Laura Memorial College of Cincinnati, O., was absorbed by the Miami Medical College of the same city. The National University Medical Department of Washington, D. C., was merged into the Columbian University Medical Department. The Omaha Medical College became the Medical Department of the University of Nebraska. The Medical Department of the University of Missouri established a full four years' course of nine months each. Their application for recognition is in the hands of the Judicial Council.

NEW COLLEGES.

The following colleges have been founded during the year: College of Physicians and Surgeons, Los Angeles, Cal.; Medical Department University of Indiana (first two years), Bloomington, Ind.; Fordham College, Medical Department, New York; Medical Department, Lombard College, Galesburg, Ill.; Bell's Medical College, Dallas, Texas; University of West Virginia Medical Department, Morgantown, W. Va.

APPLICATIONS FOR MEMBERSHIP.

Applications for membership were received from the College of Physicians and Surgeons of San Francisco, Cal.; the Medico-Chirurgical College of Kansas City, Mo.; the Medical Department of the Universtiy of West Virginia, of Morgantown, W. Va., and the Medical Department of the University of Mississippi, of Oxford, Miss. All these applications were referred to the Judicial Council for further action.

VISITATION AND INSPECTION.

In accordance with the suggestions contained in the report of the previous Secretary, which was approved by the Association, and acting on the instructions of the chairman of the Judicial Council, your Secretary undertook the work of visiting the colleges members of the Association, and continued this work until it was discovered that no specific appropriation for this work had been made, although Dr. Hall's report stated that $400.00 be appropriated annually to defray the expenses of such visitations. In the meantime, the following colleges were visited: The College of Medicine and Surgery of the University of Minnesota, the College of Medicine of Hamline University, the Milwaukee Medical College, the Wisconsin College of Physicians and Surgeons, the Medical Department of the Georgetown University, Medical Department Columbian University, Medico-Chirurgical College of Philadelphia, Jefferson Medical College and Woman's Medical College of Philadelphia. I have not made out a detailed report of the result of these visitations, waiting until the Association had decided definitely as to the nature of the report to be submitted. The data are in hand and a report can be filed at any time hereafter.

After having made these few visitations, and on attempting to make a detailed report, it became evident to me that it would be desirable to have an inspection sheet or report, to be filled out at the time of such visitations, and to be signed by an official of the college visited, thus procuring full and exact information as to the facilities for teaching possessed by the college. This blank also would be of service in reporting on colleges making application for membership in the Association. With this end in view, your Secretary, with the co-operation of the chairman of the Judicial Council, Dr. Means, prepared a blank which is submitted herewith for your consideration. This blank, it will be seen, contains a vast fund of information that will be of value not only to the Association, but also to educators of all classes. The Judicial Council has made use of this blank in a number of instances, and has found it of great assistance in the work of passing on the eligibility of applicants for membership.

[The blank asks for the following facts:]

1. Name of school. 2. Address. 3. When founded. 4. Dean. Secretary. 5. Population of city in which you are located. 6. Number and name of medical colleges in your city. 7. Number and name of hospitals in your city open to you for clinical work. Charity beds in each. Private beds in each. Maternity beds in each that can be used for clinical purposes.

8. Describe in detail your college building or buildings. 9. Estimated value. (a) Of buildings. (b) Of equipment. 10. What endowment, if any. 11. Are you connected in any way with a university? If yes, what is the connection? 12. Are the buildings owned by the college corporation? 13. Have you any funds other than the income from students?

14. How many lecture or recitation rooms in the college buildings? Size of each as to seating capacity. 15. Give equipment of laboratory for histology, embryology, biology, pathology, bacteriology, physiology, chemistry, other laboratory departments. 16. How many microscopes? Old. Modern. 17. Are any of your teachers salaried? If yes, which ones and how? 18. What facilities have you for getting dissecting material?

19. Corps of instructors: Number of professors, associate professors, assistant professors, lecturers, demonstrators, assistants, etc.

20. Students: Number of matriculants. Number of students in attendance. Freshmen. Sophomores. Juniors, Seniors. Special. Co-educational. Do you draw color line? Number graduated at the close of last session. 21. Do you adhere strictly to a four years' graded course? 22. How do you determine the standing of the students? (a) by term examinations? (b) by recitation grades? (c) Or both?

23. Length of course: (a) How many years of attendance are required for graduation? (b) How many actual teaching weeks in each session (including examinations)? (c) On what date does regular session begin? (d) On what date does it close? (e) If a continuous course, how many semesters? (f) How many semesters are required to complete an annual session? (g) How many hours are devoted to college work by student during first year? Second year? Third year? Fourth year? (h) How many hours during the four years are devoted to: D.—Didactic work (including lectures, quizzes, class demonstration)? L.—Laboratory teaching? A. C.—Amphitheater clinics? D. C.—Dispensary clinics? 24. Name subjects taught during first year, second year, third year, fourth year. State whether taught by D., L., A.C., D.C. 25. Have you any electives? If so, state which subjects and how many of each. 26. Are amphitheater clinics held in college building or in an affiliated hospital? If hospital, which one? 27. Is attendance on all clinics obligatory? 28. Have you a library? If yes, give details as to size, scope, management and how supported. 29. Have you a museum? If yes, give details as to size, scope and whether it is used in connection with the teaching. 30. What teaching facilities have you in the line of charts, models, stereopticons, photographic equipment, static machine, *x*-ray apparatus, etc.?

31. Do you grant scholarships? If yes, how is such grant determined? 32. Do you make any reduction in fees? If yes, to whom? 33. Fees: (a) Annual charge for tuition. (b) Graduation or examination fees. (c) Caution fee (breakage). (d) Dissection or other laboratory fee. (e) Amount of total fee for the entire annual course, including all charges.

34. On what minimum requirements, other than examination, do you admit students? 35. By whom are students who do not have proper credentials examined relative to their primary education? 36. What is the percentage of rejections of those who are examined? 37. Do you condition students? State conditions. 38. Do you grant any time credits for degrees or work done elsewhere? If yes, explain fully. 39. Do you grant work credits? If yes, explain fully. 40. Are you willing to bear the expense necessary for a personal examination of your institution by one or two members of the judicial council or by the secretary and the chairman of the judicial council?

STATISTICAL STUDY OF MEDICAL COLLEGES.

Another duty devolving on your Secretary was entailed by the suggestion and recommendation contained in the report of the previous Secretary, to the effect that the Secretary make a detailed study of all the medical colleges of this country, the report to embody the requirements for admission and the various conditions of admission set forth in the curricula of such colleges, and the facilities offered for giving the courses, and such other details as may be advisable. It is, of course, impossible to prepare such a report as was contemplated by the previous Secretary, within a year, although its desirability is evident. Comparatively few of the colleges responded to the request for a catalogue, and in many instances the catalogues do not contain all the information necessary for the preparation of such a detailed and lengthy report. As soon as the

work of visitation and inspection is resumed, the preparation of the report can be proceeded with as was contemplated in the recommendation, because the information can be obtained directly from the college much more correctly and expeditiously than it is possible to obtain it from a catalogue.

I have, however, begun this work and am prepared to give you the results of the little I have been able to do under the circumstances.

On taking up this work I was struck by the heterogeneity and variableness of the information to be obtained from a catalogue. Contradictory statements were made as often as three times in one catalogue. After I had figured out the amount of time devoted to various studies in about fifty catalogues, I was forced to abandon the work because the information obtained in that way could not be utilized for any purpose. Each college has its own ideas as to what should be taught and how much time should be devoted to it. Some colleges devote considerable time to studies not considered worthy of a place in the curriculum by others. Again, some studies are merged and are taught from one chair, so that no estimate can be made as to the time devoted to each of the studies so merged. A personal communication with the teacher would be the only proper way for obtaining such information, and that requires considerable time and correspondence, as well as an outlay of much money. Therefore, I have laid this portion of the work aside until some future time when conditions are more favorable for taking up a study of the curricula of medical colleges. It can not be denied, however, that such a report would be of assistance to all colleges in preparing their courses of study, and in establishing a uniformity of curricula.

LENGTH OF TERM.

Next I took up the length of the courses, and here, too, I found considerable variation. Six months may mean 24 weeks or 26 weeks. Seven months usually means a 28 weeks' course, but in some instances it is only a 27 weeks' course. Eight months means 30, 31 or 32 weeks. Nine months means anywhere from 33 to 36 weeks. I made my calculation according to the calendar, including examination weeks and omitting the vacation periods. A calculation based on the number of days of actual attendance would, perhaps, have been more interesting, and it certainly would have been more exact, and I shall make future calculations on this basis. Then, too, the length of the senior course always is shorter than the courses of the first three years, so that the fourth year of an eight months' school would not exceed 28 weeks in length.

ENTRANCE REQUIREMENTS.

Considerable variation also shows itself in the matter of entrance requirements. Admission by examination is possible in nearly all colleges. Some colleges admit only on presentation of a high school diploma, and some specify what such a diploma should represent in work done. In some instances it is rather difficult to determine just what credentials for entrance are required. Some colleges give time credits for nearly all kinds of work done. Others give only work credits, even to holders of baccalaureate degrees. A few colleges that are parts of a university prefer to admit only such students who have completed a prescribed course in such university. I have prepared a preliminary report on this, and expect to be able to present a complete report, giving the name of each college and its entrance requirements in detail. It is impossible to do this in a summarized report.

A number of colleges will not admit students on conditions, and that, in a large measure, may be responsible for the falling off in numbers of the medical students during the past year. Of course, the raising of the entrance requirements quite generally has had much to do with this falling off.

It is almost impossible to obtain a correct list of the medical colleges in this country. I believe that at present I have a list that is more nearly correct than any other. My information has been obtained from any and varied sources, but because of the constant formation of new colleges it is quite a task to keep the list correct.

I have studied all the colleges in this country—those that are members of this Association and those that are not. As a result of this study, I present the following summarized report:

There are at present in the United States, including the Philippine Islands, 128 regular schools, 19 homeopathic, 10 eclectic, 3 physiomedical, and 1 nondescript, a total of 161. Of this number, 66 of the regular schools belong to the Association and 65 are non-members. (Of this number, four have been received into membership since the writing of this report, and applications have been filed by two more.)

MEMBERS.

Of the colleges belonging to the Association, 2 are exclusively for women, 2 for negroes, 1 has both day and evening courses, 3 have a continuous course extending over twelve months and divided into four semesters of three months each; 1 college is a member of this Association and also of the Southern Medical College Association; 7 schools confer two degrees, the baccalaureate and the medical degree, at the end of six and seven years; 37 colleges have a university connection, either actual or in affiliation.

AS TO THE LENGTH OF THE TERM.

Four years of six months each, 6 colleges; four years of seven months each, 19 colleges; four years of seven and a half months each, 2 colleges; four years of eight months each, 23 colleges; four years of eight and a half months each, 1 college; four years of nine months each, 15 colleges, a total of 66.

ENTRANCE REQUIREMENTS.

Rules of this Association, 41; rules of state boards of medical registration, 9; high school diploma, 8; either a baccalaureate degree or a high school diploma, plus 15 units, 1; high school diploma, plus two years of college work, 2; high school diploma, plus one and one-third years of college work, 1; high school diploma, plus one year of college work, 1; baccalaureate degree, plus credits in physics, chemistry, biology, Latin and a reading knowledge of French and German, 1; high school diploma, plus three years of college course, 1.

This information was taken from the catalogues of the colleges, and is the minimum requirement, in lieu of which an examination may be taken.

Some colleges give no advanced standing whatever for any degree; some give a time credit of one year to dentists only; others, to dentists and veterinary surgeons; a very few give credit to graduates in pharmacy; some colleges give work credits but no time credit.

FEES.

I have included the matter of fees in my study. The fees vary from $35.00 a term to $200.00. The medical departments of universities have low fees for residents, but the same fee does not apply to non-residents. A very few colleges give a discount to the sons of physicians and clergymen. One college offers the tuition of the third and fourth years to students who matriculate for the freshman work in October, 1903 and 1904.

NON-MEMBERS.

Of the colleges who are not members of this Association, 1 is exclusively for women; 1 teaches all of the "pathies" and "sects" of medicine, including osteopathy, the student choosing his work; 5 are for negroes (4 are night schools); 4 teach the first two years only of the medical course, and 1, I understand, is a diploma mill; 34 have a university connection of some kind.

AS TO THE LENGTH OF THE COURSE.

Fours years of six months each, 19; four years of seven months each, 18; four years of seven and a half months each, 2; four years of eight months each, 11; four years of nine months each, 4; four years of ten months each, 3 (night schools); five years of nine months each, 1 (night school); two years of nine months each, 4; no information, 2—a total of 65.

ENTRANCE REQUIREMENTS.

Twelve of these schools are members of the Southern Medical College Association, and exact the entrance requirements laid down by this Association. Seven other schools abide by the rules of the Association of American Medical Colleges; 5 abide by the rules of the Southern Medical College Association; 19 require a high school diploma or its equivalent; 1, a baccalaureate degree, plus a chemistry credit; 2, a high school diploma, plus one year of college work; 1 requires "satisfactory evidence of educational qualifications necessary for the successful prosecution of medical studies"; 1, "a diploma certificate, or examination showing proficiency"; 1, "a certificate showing proficiency"; 1, "certificate showing possession of sufficient knowledge"; 1, "preliminary examination for applicants not possessing requisite diploma or certificate."

FEES.

The fees range from $30.00 to $250.00. The colored schools ask the lowest fees, and nearly all of them ask less than $50.00 per term.

This work is merely a preliminary study, and the forthcoming catalogues for the session of 1904 and 1905 will vary considerably from those of the last session, so that this work will

have to be revised from year to year. One fact is very evident, and that is, a total lack of uniformity in the rules and regulations of all the medical colleges in this country, and the desirability of having uniformity, in some things at least.

Respectfully submitted,

FRED. C. ZAPFFE, Secretary.

The financial report was referred to the following Auditing Committee: Drs. Egbert, Kober and Steele.

Committee on Medical Education.

The balance of the report was accepted, and, in accordance with the suggestion contained therein with reference to the appointment of a Committee on Medical Education, the Chair later appointed as such committee the Secretary, Fred. C. Zapffe.

Report of Judicial Council.

Dr. William J. Means, chairman of the council, reported as follows:

The Judicial Council held one regular meeting during the year, at the Wiltshire Hotel, Atlantic City, N. J., June 6. There were present Drs. W. J. Means, chairman; E. F. Ingals of Chicago, T. H. Hawkins of Denver, Randolph Winslow of Baltimore and H. B. Ward of Nebraska. The meeting was called to order by the chairman. H. B. Ward was elected secretary.

The first business was a consideration of the applications for membership made in 1903, on which action was deferred pending further investigation of the standing of the colleges.

Dallas (Texas) Medical College, withdrew its application.

The application of the University of Tennessee, located at Jackson, Tenn., referred to Dr. Means for investigation, was taken up, and, because of insufficient facilities and lack of teaching force, was not considered eligible for membership. Rejection of the application is, therefore, recommended.

The application of the University of West Virginia, located at Morgantown, W. Va., for membership, covering the first and second years only of a four years' medical course, is, on a report from Dr. Dodson, who investigated the college, recommended.

The application of the Medical Department of Wake Forest College, at Wake Forest, N. C., for membership, covering the first and second years only of a four years' medical course, is, on a favorable report from Dr. Winslow, recommended.

The application of the Medical Department of the University of Mississippi, located at Jackson, Miss., for membership, was considered, and it was decided to recommend membership covering the first and second years of a medical course.

The Medical Department of the University of Missouri made application to complete its membership for a full four years' course. A thorough investigation was made of the clinical facilities of the college, and the members of the council believe they are sufficient to meet the requirements for a thorough medical course. The council, therefore, recommends a full membership.

The Medico-Chirurgical College of Kansas City, Mo., made application for membership. After due consideration the council recommends that the matter be laid over one year pending further investigation.

COMMUNICATIONS AND ANSWERS.

During the year many inquiries were received asking for a construction of rules governing admission of students, credits, etc. Among the most important, we submit the following:

CHARGES AGAINST BALTIMORE UNIVERSITY SCHOOL OF MEDICINE.

The following charges were preferred by the Baltimore Medical College against the Baltimore University School of Medicine:

BALTIMORE, May 18, 1904.

William J. Means, A.M., M.D., Chairman Judicial Council of the Association of American Medical Colleges, 715 North High St., Columbus Ohio:

Dear Doctor:—The Board of Directors of the Baltimore Medical College has directed me to lay before your Council the following complaint against the Baltimore University School of Medicine: That the said Baltimore University School of Medicine received students, then in attendance at the Baltimore Medical College, on or about the following dates, the same being other than is permitted by the rules of the Association of American Medical Colleges:

Charles H. Glover left the Baltimore Medical College on or about Feb. 17, 1904, entered the Baltimore University School of Medicine and graduated therefrom on April 19, 1904.

Wm. E. Giesregen left the Baltimore Medical College on or about March 1, 1904, and graduated from the Baltimore University School of Medicine April 19, 1904.

Frederick S. Bootay left the Baltimore Medical College on or about Feb. 20, 1904, and graduated from the Baltimore University School of Medicine April 19, 1904.

H. Forsythe Stapp left the Baltimore Medical College on or about March 26, 1904, and graduated from the Baltimore University School of Medicine April 19, 1904.

Harper A. Wright left the Baltimore Medical College on or about Dec. 24, 1903, and graduated from the Baltimore University School of Medicine April 19, 1904.

Harry E. Duffy left the Baltimore Medical College on or about Feb. 2, 1904, and graduated from the Baltimore University School of Medicine on April 19, 1904.

Should other proof than this statement be required we will be pleased to place before your council on request documents proving the correctness of the charges herein made.

We regret to have to make this complaint against a school in our own city, a member of the Association of American Medical Colleges, but believing the charges to be true and in contravention of the rules of the Association of American Medical Colleges, as well as inimical to the general welfare of medical education, we feel it our duty to do so.

Kindly acknowledge receipt hereof, at the same time advising us what further action, if any, may be necessary on our part.

Assuring you of our cordial personal esteem, we have the honor to remain, Yours very truly,

DAVID STREETT, M.D., Dean.

P. S.—On April 20 our Dr. Samuel T. Earle informed Dr. R. Winslow, the resident member of your council, of this matter, and I presume that he has already notified you of it. D. S.

A copy was furnished the Baltimore University School of Medicine May 21. The following answer was received May 30:

BALTIMORE, May 30, 1904.

Dr. W. J. Means, Chm. Jud. Coun., Association American Medical Colleges, No. 715 N. High St., Columbus, Ohio:

My Dear Doctor Means:—I am in receipt of your favor of the 21st, and in reply our faculty is more than surprised to hear that the directors of the Baltimore Medical College should have preferred any charges against the Baltimore University School of Medicine, and the faculty at a meeting held Friday evening, May 27, 1904, has instructed me to say that each and every one of the students mentioned in your letter, that is Messrs. Charles H. Glover, William E. Geisregen, Frederick S. Bootay, H. F. Stapp, H. A. Wright and Harry E. Duffy, matriculated in the Baltimore University School of Medicine in October, and were students at our College during the session, and if they were in attendance at another college at the same time our faculty was not aware of it.

We have no desire to do anything that would conflict with the constitution or by-laws of the Association of American Medical Colleges in any way, shape or form whatever, and we do all we can to uphold and support the Association. We have done nothing to conflict with "Section 4, Article 3, of the Constitution," we only honor official credentials of recognized medical colleges, and under no circumstances do we allow *any member of the senior class to graduate at our institution* unless he takes all of the branches embraced in our senior year.

It is our custom when a student applies to us for matriculation and shows us his credentials for his past years, we never think of such a thing as asking him whether he is in attendance at any other medical college at that time.

Trusting this will be satisfactory, and assuring you of our earnest desire not to do anything that will conflict with your body, I beg to remain, Very respectfully yours,

H. H. BIEDLER, Dean,
Baltimore University School of Medicine.

Due notice was given both colleges to prepare their evidence for presentation to the council June 6, at Atlantic City.

Dr. Streett, Dean of the Baltimore Medical College, submitted evidence, properly attested, from the records of the college and teachers in support of the charges.

Dr. Biedler, Dean of the Baltimore University School of Medicine, denied the charges in a general way, but furnished no documentary evidence to support his statement.

After due consideration of the testimony the council adopted the following:

RESOLVED, The testimony presented by the officers of the Baltimore Medical College clearly established the fact that Chas. H. Glover, Wm. E. Giesregen, Frederick S. Bootay, H. Forsythe Stapp, Harper A. Wright and Harry E. Duffy were regularly matriculated students in said college, and continued in attendance during the time stated in specifications; and, the statement of the dean of the Baltimore University School of Medicine that said students were matriculated in his college in the month of October, and were in attendance during the session, unsupported by attested evidence from records of the college and teachers, is not a sufficient refutation.

Therefore, inasmuch as the charges are clearly in contravention to the rule of the association, and the requirements for graduation set forth in the college announcement, the council recommends that the Baltimore University School of Medicine be suspended from membership until satisfactory evidence is furnished from the class records and teachers of the college, properly attested, sustaining the contention that said students were in attendance during their senior year.

The members of the council wish to express to the officers of the association and the members thereof, their appreciation of the many kindly courtesies shown them. Respectfully,

W. J. MEANS, E. F. INGALS, T. H. HAWKINS, RANDOLPH WINSLOW, H. B. WARD.

On motion the report was accepted.

(To be continued.)

STATE BOARD EXAMINATION RESULTS IN 1903.

Name of College.	Arkansas.		California.		Connecticut.		Delaware.		D. Columbia.		Georgia.		Idaho.		*Illinois.		Indiana.		Iowa.		*Kansas.		Louisiana.		Maine.	
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
ALABAMA—																										
Birmingham Medical College.—R																										
Medical College of Alabama.—R	1	0			0	1									1	0							2	0		
ARKANSAS—																										
Medical Department Arkansas University.—R																										
CALIFORNIA—																										
Cooper Medical College.—R			32	7																						
Medical Department University of California.—R			1	0																						
California Medical College.—E			0	2																						
Hahnemann Medical College of the Pacific.—H			8	3																						
College of Physicians and Surgeons, San Francisco.—R			16	8																						
College of Medicine, University of Southern California.—R			21	6																						
COLORADO—																										
Denver and Gross College of Medicine.—R					1	0									1	0			1	0						
Denver Homeopathic College.—H																										
Colorado School of Medicine.—R			1	0									3	0												
CONNECTICUT—																										
Yale University Medical Department.—R			1	0	32	2															1	0				
DISTRICT OF COLUMBIA—																										
Columbian University, Department of Medicine.—R									2	1																
Georgetown University School of Medicine.—R			1	0	1	0			7	0					1	0										
Howard University, Medical Department.—R			1	0					8	5	1	0			1	1										
National University, Medical Department.—R									4	5																
GEORGIA—																										
Atlanta College of Physicians and Surgeons.—R											31	0														
Georgia College of Eclectic Medicine and Surgery.—E																										
Medical College of Georgia.—R											2	1														
ILLINOIS—																										
American Medical Missionary College.—R			1	1											5	0			1	0	1	0				
Bennett College of Eclectic Medicine and Surgery.—E															9	2	2	0								
Chicago Homeopathic Medical College.—H			1	1					1	0			1	0	24	5	1	0	3	0	1	0				
College of Medicine and Surgery.—Ph.M															19	1			0	1						
College of Physicians and Surgeons, Chicago.—R	1	0	5	4	1	0							2	0	141	1	7	0	19	2	1	0				
Hahnemann Medical College and Hospital.—H													1	0	48	2	3	0	3	1	0	1				
Harvey Medical College.—R	1	0											1	1	18	0	2	0								
Hering Medical College.—H															8	0	1	0	1	0	2	0				
Illinois Medical College.—R															12	3	2	0	1	0	1	0	1	0		
Jenner Medical College.—R															11	2										
Northwestern University Medical School.—R			5	1									1	0	56	0	2	0	25	0	5	0				
Rush Medical College.—R	1	0	4	4									2	1	140	0	15	0	18	2	5	0	1	0		
National Medical University															7	4										
American College of Medicine and Surgery.—E																	1	1								
Dunham Medical College																	1	0	1	0						
INDIANA—																										
Central College of Physicians and Surgeons.—R																	0	1								
Medical College of Indiana.—R											1	0					3	0								
Physic Medical College of Indiana.—Ph.M	1	0																	1							
Eclectic Medical College of Indiana.—E																	0	1								
Fort Wayne College of Medicine.—R			1	0																						
IOWA—																										
Keokuk Medical College of Physicians and Surgeons.—R	1	0							1	0			1	0	1	1	1	2	33	3	1	1				
Iowa College of Physicians and Surgeons.—R															0	1			16	3						
Sioux City College of Medicine.—R															1	0			13	0						
State University of Iowa, Homeopathic Medical Dept.—H																			12	0	1	0				
State University of Iowa, Medical Department.—R			2	1									1	1	4	0			81	1						
KANSAS—																										
College of Physicians and Surgeons of Kansas City.—R													1	1					6	1						
Kansas Medical College.—R													0	1												
KENTUCKY—																										
Hospital College of Medicine.—R													1	0	2	0	8	0	1	1	1	0	1	0		
Kentucky School of Medicine.—R			1	0									0	3	2	0	23	3	0	1			0	2	1	0
Louisville Medical College.—R													1	1	1	0		3			1	0	3	1		
Southwestern Homeopathic Medical College.—H											1	0														
Medical Department, University of Louisville.—R			0	3	1						2	0					3	1					2	0		
Kentucky University, Medical Department.—R															1	0	6	0			1	0				
LOUISIANA—																										
Flint Medical College of New Orleans University																							2	5		
Tulane University, Medical Department.—R	1	0									1	0					1	0					66	0		
MAINE—																										
Medical School of Maine, Bowdoin College.—R			1	2																					21	0
MARYLAND—																										
Baltimore Medical College.—R			1	6	3	3	2	0	0	1					4	0	2	0			1	0	1	0	2	0
Baltimore University School of Medicine.—R							0	1							2	1									2	0
College of Physicians and Surgeons of Baltimore.—R			0	2		3			0	1	2	0					1	0			1	0			3	0
Medical Department, Johns Hopkins University.—R			3	0	2	0			7	0	2	0			3	0			1	0					1	0
Southern Homeopathic Medical College.—H											1	0														
University of Maryland, School of Medicine.—R									1	0	3	0													1	0
Woman's Medical College of Baltimore.—R															1	0										
Maryland Medical College.—R							0	2																	2	0
MASSACHUSETTS—																										
Boston University School of Medicine.—H			1	0	2	1																			1	0
College of Physicians and Surgeons.—R					0	1																			2	0
Harvard University Medical School.—R			3	0	4	0					1	0					1	0	1	0					8	0
Tufts College Medical School.—R			0	1	2	2			1	0													1	0		
MICHIGAN—																										
Detroit College of Medicine.—R			2	2													1	0								
Detroit Homeopathic Medical College.—H						0																				
Michigan College of Medicine and Surgery.—R																										
Grand Rapids Medical College.—R																	1	0								
Saginaw Valley Medical College.—R			1	1																						
University of Michigan Dept. of Medicine and Surgery.—R			1	0	1	0							2	0	7	0	3	0		0			1	0	1	0
University of Michigan Homeopathic Medical College.—H																										
MINNESOTA—																										
College of Homeopathic Med. and Surg., Univ. of Minn.—H																										
College of Medicine and Surgery, Univ. of Minnesota.—R			2	0	1	0							2	0					1	0						
Medical Department of Hamline University.—R																	1	0								
MISSOURI—																										
Medico-Chirurgical College.—R																										
Woman's Medical College.—R													1	0												
University Medical College of Kansas City.—R			1	0									0	1	1	0		0	1	7	3	0	1	0		

*Reports from one or two examinations not received.

COMPILED FROM REPORTS OF STATE BOARDS. (SEE EDITORIAL.)

Maryland.		Massachusetts.		Michigan.		Minnesota.		* Montana.		New Hamp.		New York.		No. Carolina.		No. Dakota.		Ohio.		Oklahoma.		Oregon.		* Pennsylvania		Rhode Is'and.		So. Carolina.		So. Dakota.		Tennessee.		Texas.		Utah.		Vermont.		Virginia.		Washington.		West Virginia.		Wisconsin.		Totals.	Passed.	Failed.	Percentage of Failures.
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F				
																														1	0													1	1	0	0.
																												0	1	1	0	1	0											8	6	2	25.0
																																3	0											3	3	0	0.
						1	0															1	0	1	0													5	1					48	40	8	17.9
												0	0																					1	0					1	0					4	4	0	0.
																																								0	1					3	0	3	100.0
																																		1	0					2	1					12	9	3	25.0
																						1	0											1	0					2	1					29	20	9	31.0
																																													21	21	0	0.
												1	0	2	0							1	0	1	0									1	0			1	0						10	10	0	0.
																1	0																												5	5	0	0.
		1	0									5	0											1	0	1	0																		45	43	2	4.4
1	0											1	0					1	0					1	0											4	1			1	0				14	12	2	14.3
2	0											2	0					1	0	1	0			1	0	1	0					1	0					1	0						18	18	0	0.
												0	1	1	0																					2	0			3	1			27	19	8	29.6
														1	0																													10	7	3	30.0
												1	0	1	2							1	0					3	1			1	0	2	0									56	42	14	25.0
												1	0	0	1																	0	1											4	1	3	75.0
												1	0	1	1																	1	0											9	6	3	33.3
		1	0									1	0							1	0									2	0													14	13	1	7.1
																0	1			0	1	1	0									0	1							2	1			20	14	6	30.0
				1	0	1	0					2	0					1	0	1	0																	1	0			1	0			44	40	4	9.1
				0	1																											0	1											29	20	9	31.0
						9	8	2	0			1	0			5	3	3	0			4	0			1	0			1	0	2	0									13	0	247	229	18	7.3
								0	1			0	1																											1	1	71	64	7	9.9
						3	4									1	0																									0	2	32	25	7	21.9
																																										1	0	14	14	0	0.
						0	1					0	1					2	0					0	1	2	2					2	1	1	0			1	1	2	1	1	1	40	28	12	30.0
						8	0	2	0							4	1	1	0									2	0							5	2					9	1	13	11	2	15.4
						11	2	3	0			3	0			4	1	5	0	1	5	6	0					4	0			1	7	0				9	4			12	1	254	238	16	5.8
																																												11	7	4	36.4
																																		0	1			1	0						1	0	1	100.
																																						1	0						4	3	1	25.0
																				0	1											1	0											3	1	2	66.7
																																												4	4	0	0.
																																												2	2	0	0.
																																												1	0	1	100.0
												0	1																															2	1	1	50.0
						2	0	0	1			1	0			0	3			0	3																	1	0							56	42	14	25.9
						0	1																					1	1															15	11	4	26.7
						2	2									1	0					1	0									1	0											17	15	2	11.8
																																												13	13	0	0.
																						1	0									1	0											98	93	5	5.1
								0	1											1	0																							4	1	3	75.0
																						1	0	1	1																			4	2	2	50.0
		18		1										0	1			0	1	1	1							1	0	3	0	2	1					1	0	1	1			28	23	5	17.9
		32												2	0	2	1	1	0			3	0	2	0	1	0			1	0	1	0	3	0			0	1	1	0	3		51	32	19	37.3
												2	0	2	1	1	0			3	0	2	0	1	0			1	0	1	0	3	0			2	1	1	0			39	30	9	23.1
																																												1	1	0	0.
		1	0									1	0	2	0			0	1					1	1							4	2			1	0			0	2			27	17	10	37.0
														2	0					0	1											1	0			1	0	1	0					14	13	1	.....
																										1	0																	7	2	5	71.4
		1	1									0	1													1	0					1	0					1	0					79	79	0	0.
																										1	0																	28	24	4	14.3
24	8	16	3							2	1	9	0	4	0			3	0					12	4	2	3									7	2	1	1			10	1			185	110	25	18.5
0	1	7	2									3	1	1	0									5	3											1	0	2	2			3	2			43	19	24	55.8
11	3	5	3									3	0	1	0					0	1	1	0	6	1	5	0	1	0			1	1			1	0			1	1	0	11	0			74	56	18	24.3
11	1	5	0			1	0					6	0			1	0	3	0							1	0			1	0							2	0			2	0			58	52	1	1.9
		0	1																													1	0											3	2	1	33.3
40	7					2	0					3	0	11	3			2	0					3	1			7	0			2	0	1	0			7	2	1	0	5	0			102	89	13	12.7
		1	0																																									2	2	0	0.
7	0	2	2									2	0							1	1			1	2			1	1			2	0			0	1	4				9	2			56	31	25	44.6
		25	4					0	1	2	0	3	0	0	1							2	0									1	0			1	0	1	0					46	39	7	15.2
		7	4									1	1																							0	1			1	0					18	11	7	38.8
		89	1					1	0	9	0	9	1			2	0	1	0					1	0	9	0											2	0							133	132	1	0.8
		11	2							1	1	1	0													0	1									1	0									55	48	7	12.7
						1	0					1	0			2	0	3	0					1	0	1	0									1	0			5	0			2	1	23	20	3	13.0
																		1	0																									1	1	0	0.
																		1	0			1	0																					1	1	0	0.
		1	0																																									3	3	0	0.
		2	0			2	0	1	1			10	1	1	0	3	0	8	0			4	0	3	0	1	0			1	0					1	0	7	1					68	65	3	4.4
												1	0																															1	1	0	0.
						7	7	1	0			1	0			11	0													1	0							4	0			3	0			113	106	7	6.2
						29	7									6	1																													44	36	8	17.9
																																		1	0											1	1	0	0.
								0	1																							0	1											1	1	0	0.
																																												19	8	11	57.9

STATE BOARD EXAMINATION RESULTS IN 1903.

Name of College.	Arkansas.		California.		Connecticut.		Delaware.		D. Columbia		Georgia.		Idaho.		*Illinois.		Indiana.		Iowa.		*Kansas.		Louisiana.		Maine.	
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
MISSOURI—*Continued*:																										
Kansas City Hahnemann Medical College.—H																			0	1	2	0				
Kansas City Medical College.—R	1	0											2	0							2	1				
Eclectic Medical University.—E																										
Central Medical College.—R													0	1												
Ensworth Medical College.—R																					0	1				
Barnes Medical College.—R			1	1							1		2	1	2	5	1	0	4	5						
Marion-Sims-Beaumont College of Medicine.—R													1	0	4	0	3	1	1	0	2	0	1	0		
St. Louis College of Physicians and Surgeons.—R													1	0	1	0	2	0		2	1	0				
American Medical College.—E			0	1									0	1	1	0										
Homeopathic Medical College of Missouri.—H															1	0	2	0								
Medical Department, Washington University.—R			2	2													1	0	1	0						
University of the State of Missouri.—R																							1	1		
NEBRASKA—																										
University of Nebraska College of Medicine			0	1															3	4	1	1				
John A. Creighton Medical College.—R			1	0									1	0	2	0			4	1						
Lincoln Medical College of Cotner University.—E																										
NEW HAMPSHIRE—																										
Dartmouth Medical College.—R					2	1													1	0					2	0
NEW YORK—																										
Albany Medical College.—R			1	0																						
College of Physicians and Surgeons.—R			3	0	17	0			2	0			1	0					1	0					3	0
Cornell University Medical College.—R					2	0									1	0										
Eclectic Medical College.—E																										
Long Island College Hospital.—R			0	1	2	1											1	0								
New York Homeopathic Medical College and Hospital.—H			1	1	1	0																				
New York Medical College and Hospital for Women.—H					1	1																				
University and Bellevue Hospital Medical College.—R			3	5	11	1			2	0	2	0			1	0	1	0			2	0			1	0
Syracuse University College of Medicine.—R					2	0																				
University of Buffalo, Medical Department.—R			1	1																						
Niagara University			1	0	1	0																				
NORTH CAROLINA—																										
Leonard Medical School.—R											3	0														
North Carolina Medical College.—R																										
Medical Department, University of North Carolina																										
OHIO—																										
Western Reserve University Medical College.—R			1	0													1	0								
Cleveland College of Physicians and Surgeons.—R			1	1																						
Cleveland Homeopathic Medical College.—H			0	1					0	1					1	1	1	0			1	1				
Eclectic Medical Institute.—E			0	1											3	1	4	2	0	2	1	0				
Laura Memorial Woman's Medical College.—R			1	0													1	0								
Medical College of Ohio.—R			2	0											1	0	7	0								
Pulte Medical College.—H			1	0													1	0								
Miami Medical College.—R																	2	0	1	0						
Ohio Medical University.—R			1	0													2	2			1	0				
Starling Medical College.—R					0	2											1	0								
Toledo Medical College.—R																										
Cincinnati College of Medicine and Surgery					1	0											1	0								
OREGON—																										
University of Oregon Medical Department.—R																										
Medical Department, Willamette University.—R																										
PENNSYLVANIA—																										
University of Pennsylvania Department of Medicine.—R	1	0	5	1	3	0	2	0	3	0	1	0			0	1	1	0			1	0	1	0	4	0
Hahnemann Medical College and Hospital.—H					4	0			4	0							2	0							1	0
Jefferson Medical College.—R	2	0	2	0	6	1	0	1			2	0	2	1	2	0	5	0	2	0	1	0	2	0	2	0
Woman's Medical College of Pennsylvania.—R					0	1	0	1	1																	
Medico-Chirurgical College of Philadelphia.—R			1	0	3	1	2	0									1									
Western Pennsylvania Medical College.—R																										
SOUTH CAROLINA—																										
Medical College of the State of South Carolina.—R					1	0																				
TENNESSEE—																										
Tennessee Medical College.—R																							1	0		
Medical Department of University of Nashville.—R											3	0													1	1
Vanderbilt University Medical Department.—R	1	0	1	1							2	0											1	1	1	0
University of Tennessee Medical Department.—R	2	0																			1	0	3	0		
Meharry Medical College.—R			0	1							5	1			1	0			0	2			1	3		
Memphis Hospital Medical College.—R	1	0																					5	6		
Sewanee Medical College.—R			0	2	0	2					4	0											6	8	1	0
Chattanooga National Medical College.—R																										
Chattanooga Medical College.—R	2	0									1	0									1	0			1	0
TEXAS—																										
Medical Department Fort Worth University.—R																							1	0		
University of Texas Department of Medicine.—R																										
Baylor University College of Medicine																										
Dallas Medical College.—R																										
VERMONT—																										
University of Vermont Medical Department.—R			0	1	7	1																			1	0
VIRGINIA—																										
Medical College of Virginia.—R																										
University College of Medicine.—R																										
University of Virginia Department of Medicine.—R									2	0	1	0														
WISCONSIN—																										
Milwaukee Medical College.—R					1	0									2	0			1	0						
Wisconsin College of Physicians and Surgeons.—R																										
CANADA—																										
University of Toronto, Medical Faculty					1	1							1	0			2	0	1	0						
Ontario Medical College for Women																										
Queen's University																			1	0						
Medical Department of Western University																										
University of Bishop's College, Faculty of Medicine																										
McGill University, Faculty of Medicine			2	1	1	0									0	1					1	0			6	0
Universite Laval, Faculte de Medicine			0	1											1	0									5	0
Manitoba Medical College																			1	0						
FOREIGN	1	0	4	8	1	0									9	0	2	0	3	0			0	1		
Totals by states	18		226		151		11		59		85		45		594		157		313		48		156		73	
Totals—Passed	18		152		128		7		46		73		31		559		141		273		43		132		73	
Totals—Failed			74		23		4		13		12		14		35		16		40		5		24			
Percentage of failures	0.0		32.7		15.2		36.4		22.0		14.1		31.1		5 9		10 2		12.8		10.4		15.4		0.0	

*Reports from one or two examinations not received.

COMPILED FROM REPORTS OF STATE BOARDS. (SEE EDITORIAL.)

	Maryland.		Massachusetts.		Michigan.		Minnesota.		*Montana.		New Hamp.		New York.		No. Carolina		No. Dakota.		Ohio.		Oklahoma.		Oregon.		*Pennsylvania		Rhode Island		So. Carolina.		So. Dakota.		Tennessee.		Texas.		Utah.		Vermont.		Virginia.		Washington.		WestVirginia.		Wisconsin.		Totals.	Passed.	Failed.	Percentage of Failures.
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F				

Therapeutics.

Hay Fever.

Parsons, in the *Med. Record* for July 16, 1904, discusses the treatment of this condition under the following three heads: 1. Constitutional. 2. Local. 3. Treatment of the exacerbation.

1. On account of the frequent occurrence of the disease in those persons with a neurotic temperament, the treatment should be directed toward building up the tone of the nervous system. For this he recommends: (a) The daily cold plunge, to be taken immediately on rising, or for those not robust, cold sponging of the neck and chest. The bath should be begun several weeks before the usual time for the hay-fever to make its appearance. (b) The mode of life, diet, and exercise should be regulated. (c) Wear suitable clothing and use especial care to prevent cooling off too suddenly after perspiring. Avoid unnecessary exposure to drafts. (d) The sleeping room should be ventilated. (e) Tonics, such as strychnin, arsenic and phosphorus, are indicated. 2. The nasal cavities should be examined, preferably two months before the hay fever season. If any chronic inflammatory condition be found it should be relieved; if any obstruction to the nasal passages is present it should be removed. All sensitive points should be touched with a caustic, such as a solution of nitrate of silver. This plan of treatment may need to be renewed at the same period for two or three years before marked improvement in the severe cases can be expected. 3. Treatment of the exacerbation. Locally the author suggests some spray of a mild alkalin solution, followed by adrenalin solution as a spray in the proportion of 1 to 5,000 in normal salt solution. The strength may be increased as found necessary. It is best to follow this with some bland oily spray.

For the general treatment of the exacerbation the author refers to the strong plea made by other authorities for the so-called uric acid theory in the production of hay fever and the recommendations for the active treatment of this diathesis six weeks or two months before the expected onset of the exacerbation. He suggests the administration of aromatic sulphuric acid, or phosphoric acid, for a time, followed by small doses of salicylate of sodium, three grains three times a day, and cutting off the acid-producing drinks, such as beer, wine, cider, lemonade, etc. Avoid meat, strawberries, coffee, tea, meat extracts, vinegar, sour pickles, preserves, sugar, potatoes and other starchy foods. Ham and bacon may be allowed. The diet should consist principally of cereals, eggs, fish, fresh fruit, vegetables, milk and cocoa. Water should be drunk freely.

For internal medicinal treatment the author recommends the saccharated extract of the dried suprarenal gland, in doses of two grains, three times a day, beginning about two weeks before the attack of hay fever usually occurs, given with a view to retarding and mitigating the attack so far as possible.

Camphor will often give temporary relief in hay fever, administered five drops every fifteen minutes for the first hour and repeated at longer intervals as required.

COLD APPLICATIONS.

Aside from the medicinal measures relief may be obtained from the use of a cold spinal douche, for from fifteen to thirty seconds, at a pressure of twenty to thirty pounds to the square inch, at a temperature of 60 degrees. Patients soon become used to the douche if properly administered and followed by a brisk rub. If an apparatus for the douche is not at hand, water from a pail should be dashed over the patient's back, the operator standing at a distance.

CLIMATE.

Change of climate benefits a large number of patients, a sojourn among the mountains benefits some, others obtain most relief at the sea shore especially from the surf bathing. The surf bathing acts as a general stimulant and locally, by the force with which it enters the nostrils, to induce contraction of the capillaries and dilated veins. Patients should not remain in the water long enough to chill. The associated asthma and bronchitis may require special treatment. The author advises against the use of opium or cocain in any form. Patients should be advised against the use of tobacco and alcoholic stimulants during the exacerbation. They should be further cautioned not to ride in the dust when that is known to bring on an attack.

The following is recommended as a bland oily and sedative spray, to be used after the adrenalin solution:

R.	Acidi carbolici Mentholi, āā ..... gr. i		06
	Camphoræ ..... gr. v		30
	Liq. albolin ..... ʒi	30	
M. Sig.: Use locally as a spray for the nose.			

Medicolegal.

Validity of Medical Practice Act—Association of American Medical Colleges Standard.—The Supreme Court of California says, *ex parte* Gerino, where a rehearing has been denied, that the act of Feb. 27, 1901, for the regulation of the practice of medicine and surgery, provides, with respect to the membership of the board of examiners, that "five members thereof shall be elected by the Medical Society of the State of California, two members thereof by the California State Homeopathic Medical Society, and two members thereof by the Eclectic Medical Society of the State of California." The power of the state to constitute such a board, and to impose restrictions on the right to practice medicine, to be enforced by the board, rests entirely on the theory that such regulations are for the general welfare, and specifically to protect people from the arts of quacks and pretenders and from the mistakes of incapable practitioners. The societies named, by receiving this power of appointment, are constituted agencies of the state to perform a part of the duty pertaining to the sovereign power of the state, and they are not, in that respect, the recipients of private rights or privileges. It may be true that in making these appointments each medical society will choose persons who believe in the school of medicine of which its members are composed. This, however, does not render the law unconstitutional. The board, when appointed, must act equally for the benefit of all applicants, and impartially with respect to each, regardless of the school of medicine to which they belong. Moreover, even if method provided in the law for the appointment of the members was invalid, and other provisions of the law would stand unaffected. There would then be a legal office established, without any specific provision for the appointment of any person to fill it, and the vacancy thus existing could be filled by appointment of the governor. But, as it would be a legal office, it could be filled by a de facto officer, and in that case the validity of his appointment and his right to hold the office could not be questioned in a proceeding in habeas corpus. Nor does the court think the act rendered unconstitutional by the provision that the applicant for examination must produce a diploma issued by some legally chartered medical school, the requirements of which "shall have been, at the time of granting of such diploma, in no particular less than those prescribed by the Association of American Medical Colleges for that year." It says that the law on this point is not to be construed so as to require these colleges to have the identical course of study and other requirements prescribed by the association. The standard of scholarship required is that it shall be equal to the standard required by the association. It need not be the same course of study, nor the study of the same text-books, nor the attendance for the same length of time, but it must be such as requires of the student a degree of proficiency in the studies necessary to prepare him for practice equal to that which would ordinarily be produced by the requirements prescribed by the association. Whether or not the Association of American Medical Colleges is composed of those only which teach the allopathic branch of that profession, the court can not say; but, admitting it to be so, it can not say that there is in this

provision of the law, thus understood, an arbitrary or unjust discrimination against other schools. Surely they would not claim the right to have their adherents admitted to practice the profession on a less degree of proficiency in the preparatory studies than is required of those in the regular school. It being proper for the legislature to demand some standard of efficiency, the court thinks it equally within its power to declare that it shall be the same as that prescribed from time to time by an association composed of colleges devoted to the work of preparing persons for the profession. It says that evidently the standard of proficiency in scholarship as a preparation, and the particular studies necessary to secure a fair preparation, must change as the discoveries in natural science open new fields of investigation, and suggest or reveal new curative agencies. The legislature can not successfully prescribe in advance a standard to meet these new and changing conditions. Lastly, the court says that it was not necessary to consider whether or not the provision for reciprocity is constitutional. Conceding, but not deciding, that such provision is void, it did not affect the other provisions of the act under which the petitioner was held in custody on the charge of practicing medicine without a certificate from the state board of medical examiners.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

July 30.

1. Treatment and Control of the Tuberculous Patient in the Home. Lawrence F. Flick.
2. Edema. Consideration of the Physiologic and Pathologic Factors Concerned In Its Formation. S. J. Meltzer.
3. *Immediate Repair of Laceration of the Perineum, with Special Reference to Placing the Sutures in Position Before Laceration Takes Place. A. Lapthorn Smith.
4. *Carcinomatous Transformation of Ulcer of the Stomach. John Dudley Dunham.
5. *Treatment of Gonorrhea: A Clinical Study. Henry T. Byford.
6. Persistence of Certain Racial Characteristics. Pearce Kintzing.

3.—See abstract in THE JOURNAL, xlii, p. 1584.

4. **Carcinomatous Transformation of Gastric Ulcer.**—Dunham is of the opinion that cases of carcinomatous transformation of ulcer of the stomach are probably more frequent than is currently believed. Treatment may be along surgical lines with a reasonable hope of prolonging life, and along medical lines in a palliative manner. A most important phase of this question is the diagnosis and prophylaxis. In the majority of cases the indications of ulcer continue until the malignant invasion. It is rarely possible to find a tumor. The chemic and microscopic findings in the stomach contents are not characteristic of cancer until late in the progress of the disease. An increase in the hydrochloric acid, usually noted until very near the fatal issue, often misleads in the diagnosis. In another class of cases the ulcer symptoms continue until the end, and in a third class the ulcer symptoms may have subsided for months, or perhaps years, and a recurrence of digestive difficulties seems to indicate a return of the ulcer, but in reality they are due to the beginning of the malignant growth. Having established the presence of ulcer, the physician should impress on the patient the gravity of his case. He should insist on the importance of appropriate treatment, such as rest in bed, with rectal alimentation, followed by milk diet over a period of perhaps four weeks. Under such a course of treatment the symptoms may become more marked. The patient may have paroxysms of pain three or four times a day after taking food, and under such circumstances, with the stomach contents showing increased acidity, we may be fairly certain that the diagnosis is canceration of the ulcer. Speaking of prophylaxis, Dunham says the proper treatment medically of simple ulcer in its first manifestations is a preventive measure which physicians should enforce rigidly. Gastro-enterostomy by a skillful surgeon should be employed in intractable chronic ulcer to prevent cancer development. A recurrence of digestive disturbances after a history of ulcer with apparent recovery should be treated at once. Surgical interference is successful only when resorted to early, in cases of development of cancer on ulcer.

5.—See abstract in THE JOURNAL, xlii, p. 1585.

New York Medical Journal.

July 30.

7. Removal of Obstructions and Cicatricial Contractions of the Nose by the Plastic Method. John O. Roe.
8. Lentigo; Unilateral Distribution; Report of a Case. John Irvine McKelway.
9. *Some Notes on Riggs' Disease and Its Treatment. George F. Souwers.
10. Consideration of Some Points in Obstetrics. Helen Hughes.
11. Report on the Curricula of American Medical Colleges. (Concluded.) George W. Webster.
12. Regulation of the X-ray Tube. J. Sherman Wight.
13. Reflections on the Financial Status of the Medical Career. Nathaniel G. Price.

9. **Riggs' Disease.**—Souwers emphasizes the importance to the practitioner of knowing more about the treatment of Riggs' disease. The family history is as important as the patient's personal history and should receive proper attention if any treatment is needed. Locally, the mouth should be cleansed with hydrogen peroxid, dilute aromatic sulphuric acid, sodium carbonate and borax. The mouth is then cleansed thoroughly with water and dried, after which sulphate of quinin is dusted along the seat of the disease and lightly packed between the teeth. The patient should use a mouth wash two or three times daily; at bedtime, or other convenient period, he should rinse the mouth with milk of magnesia or a solution of magnesia, the portion of the drug precipitated or adhering to the teeth, etc., not being removed by subsequent washing. Mouth washes containing tincture of myrrh are not advisable, because myrrh is precipitated by contact with the watery secretions of the mouth, and at times finds lodgment between the gums and the necks of the teeth, thus acting as a foreign irritating body. As an aid in the relief of the gum congestion, a 1 to 1,000 solution of adrenalin acts nicely, particularly in the declining stage of the inflammation. In those cases in which the teeth are sensitive to temperature changes, relief may be obtained by adding a few drops of phosphoric acid to oxid of zinc and applying a thin layer of the mixture to the painful area. A coat of sandarac varnish will serve as a temporary expedient. This treatment, if carried out carefully, always gives the desired result.

Medical News, New York.

July 30.

14. *Eye-strain and the Psychoses. Charles L. Dana.
15. Migraine and Sick Headache. Colman W. Cutler.
16. *Relation of Epilepsy, Chorea and Other Motor Disturbances of the Nervous System to Eye Disease. B. Sachs.
17. Eye Symptoms of Hysteria, Neurasthenia and the Traumatic Neuroses. Ward A. Holden.
18. Intrahepatic Cholelithiasis. (To be continued.) Edwin Beer.
19. Value of a Knowledge of Abnormal Mobility of the Iris as an Aid in Diagnosing Diseases of the Nervous System. D. Kerfoot Shute.

14. **Eyestrain and the Psychoses.**—Dana says that alienists do not recognize eyestrain, even as a contributing cause. He has seen a few cases of eyestrain with apparent bad results mentally, in students. It seemed as if the eyestrain really led to a kind of exhaustion psychosis—a mental confusion—so that they could no longer read or study, or remember. This condition was accompanied by apathy and depression and lack of general interest. The eyes showed refractive errors and secondary muscular strain. Recovery came very quickly in most cases after rest and proper glasses. He believes it wise to have the eyes of psychopathic children examined carefully. After sixteen years of watching he has found hardly any cases in which eyestrain is an important and direct factor in establishing even a minor psychosis, though it modifies its symptoms and secondarily adds to the disturbance. The visual function is largely automatic and spinal, and when the mind is a good mind, the visual machinery does not overthrow or directly and seriously affect it. When the mind is unstable or the body weakened, cerebral eyestrain plays its part; and when the mind is unstable and the visual machinery is very poor, even spinal and migraine eyestrain may do some harm. Dana suggests that "glassing" has become something

of a minor psychosis. He does not think that our mental balance and nervous wellbeing are so entirely at the mercy of slight defects in an organ that has been perfected by millenniums of use and misuse.

16. **Eyestrain and Motor Disturbances of the Nervous System.**—The relation of diseases of the eyes to functional nervous disorders characterized by motor phenomena is discussed by Sachs. He is convinced that not a single case can be cited in which the cure of a genuine epilepsy followed the relief of any one of the many "phorias" with which oculists are pleased to puzzle us. The evidence furnished from time to time by advocates of this special doctrine is wholly untrustworthy. What is true of epilepsy applies also to the relation of eyestrain and other ocular conditions to chorea minor. The idea that it might be due to some slight lack of adjustment in the ocular apparatus is too absurd to be considered even for an instant. In cases of so-called "habit chorea" it is well to have the patient examined carefully for his ocular as well as for his nasal condition, and any existing defect, however slight, remedied. It is these cases of habit chorea, and not cases of chorea minor that are relieved by such treatment as a competent oculist may suggest. A careful distinction must be drawn between these two diseases. The relationship between ocular affections and epilepsy, chorea and convulsive tic may be a close one in the minds of same "faddists," but it must remain a very remote one in the minds of those who have no special axes to grind and no particular therapeutic territory to exploit.

Boston Medical and Surgical Journal.

July 28.

20 Congenital Dislocation of the Hip. E. H. Bradford, R. W. Lovett, E. G. Brackett, Augustus Thorndike and John Dane.
21 *A Meteorological Study of the Winter of 1903-4. Carroll E. Edson.
22 Implantations of Silver Filigree for Cure of Large Ventral Hernia. Report of Two Cases. H. B. Perry.

21. **A Meteorologic Study.**—Some of the meteorologic data of the winter of 1903-04, as prevailing in various parts of the country, teach a lesson of therapeutic value. Edson undertook this work, selecting for study only the period of winter from Nov. 1, 1903, to April 1, 1904—a period of five months or 152 days, and took the following cities: Boston, New York, Philadelphia, Buffalo, Chicago and Denver. The article contains a number of tables showing the mean temperatures, the mean maximum and mean minimum temperatures, the average daily excess or deficiency of temperature over mean of 33 years, number of days with maximum temperature 32 F. or lower, mean relative humidity, sunshine, number of cloudy, partly cloudy and clear days, precipitation in inches, and wind. He says that climate is not a thing in itself; it is only the conditions of sun and rain and heat and cold and wind prevailing in any place. It is not a treatment for anything, but in a disease in which our weapons are discipline, food and outdoor life, a study of meteorologic conditions will enable us to place the patient where he can obtain the best opportunity for living that outdoor life most constantly and most comfortably. All weather is not the same, all fresh air is not equally good, but a location like that of Denver offers, by the conditions of its climate, its lack of storm, its absence of cloud, its warmer sunshine, definite advantages for the outdoor life so essential to the welfare of the tubercular individual.

Medical Record, New York.

July 30.

23 Age and Youth in Medicine. W. W. Keen.
24 Observations on Radium. Max Einhorn.
25 *Tic. Charles J. Aldrich.
26 Some Phases of Chronic Laryngitis. Z. L. Leonard.
27 Recent Progress in Genito-urinary Surgery. Martin W. Ware.

25. **Tic.**—Aldrich discusses tic, as distinguished from chorea, at great length, and describes cases illustrative of the various classes. The following is the classification of tic which he has adopted: 1. Involutional tic, the so-called senile acquired tic of other writers. 2. Evolutional tic, or the so-called early tic. The first variety usually presents itself in the simple form, but not rarely may be quite complex and even associated with psychic stigmata. Evolutional tic may be divided into: (*a*) degenerative evolutional tic, a morbid manifestation on the part of a degenerative nervous system usually inherited but possibly acquired; (*b*) acquired evolutional tic; (*c*) imitative evolutional tic. His definition of tic is: "Evolutional tic is a psycho-neurosis, in which a subconscious idea tends to arise spontaneously and force recognition by externalizing itself in expressed thought (*tic de pensée*), or in a more or less automatic repetition of some stereotyped movements which are identical with volitional acts—co-ordinate tic."

Cincinnati Lancet-Clinic.

July 30.

28 Gastrectasia; Its Clinical Significance and Treatment. D. B. Conklin.
29 Pyuria. G. S. Van Horn.
30 Dilated Heart. D. C. Houser.

St. Louis Medical Review.

July 16.

31 Report of Twenty Cases of Typhoid Fever. Clarence A. Good.

Physician and Surgeon, Detroit and Ann Arbor.

May,

32 *The Present Status of Streptococcus and Tetanus Antitoxin Injections. Victor C. Vaughan.
33 What Light Does Our Recent Knowledge of Tetanus Throw on Other Muscle and Nerve Affections. David Inglis.

32. **Streptococcus and Tetanus Antitoxin.**—The present status of streptococcus and tetanus antitoxin injections is discussed by Vaughan, and he reviews the work done in this field by Marmorek, Moser, Tavel and other investigators, both in the laboratory and the clinic. Many of these streptococcus sera are practically valueless against either weak or virulent cultures of the organism. The results obtained by various clinicians have been extremely variable, and while one man strongly indorses a particular serum, another just as strongly and unequivocally condemns it. The results obtained from the use of this serum are so variable as to cast considerable doubt and uncertainty over its efficacy in the treatment of streptococcus infections. It is evident that our knowledge of the streptococcus toxin is deficient, and before a satisfactory antistreptococcic serum can be prepared we must be able to prepare a soluble streptococcus toxin. The various sera now on sale are all made very carefully and with the best of intent. Each investigator has prepared what he believes to be the only true antitoxin, but they are all alike in their inefficacy. There is at present no satisfactory method of standardizing antitetanic serum, and we are quite ignorant of the value of any preparation we are employing. There is, however, apparently no danger of using too much, as it has been shown that antitetanic serum is harmless. Its prophylactic value has been demonstrated repeatedly, and Vaughan recommends that prophylactic doses be given whenever the physician is called on to dress a wound which in his opinion might be infected with tetanus bacilli, and that this injection be repeated on the third, fifth and seventh days after the infliction of the injury.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

July 23.

1 Dosage of Isolated Mammalian Heart by Chloroform. C. S. Sherrington and S. C. M. Sowton.
2 Report on the Form of Chloroform Inhaler. A. Vernon Harcourt.
3 Estimation of Chloroform Dissolved in Blood. D. B. Byles, A. V. Harcourt and Victor Horsley.
4 *Use and Abuse of Midwifery Forceps. J. A. C. Kynoch.
5 Present Position of Radium in Therapeutics; with a Summary of the Finsen Light and X-ray Treatment. C. M. O'Brien.
6 Some Results of Treatment by X-rays, High Frequency Currents and Ultra-violet Rays. J. Alfred Codd.
7 Colitis Polyposa. Frank Pope.
8 Fatal Case of Cyanosis with Enlarged Spleen. Theodore Fisher.

4. **Use and Abuse of Midwifery Forceps.**—This subject is discussed fully by Kynoch, who believes that the forceps are used too often by men without the necessary experience in their use, and that the mortality is thereby much higher than is necessary. This statement is borne out by the lower mortality rate in hospital practice than in private practice. It

has not yet been proved that by a frequent application of the forceps a very large saving of fetal life is obtained, but the figures at our disposal show at least a slight saving, with equally good results for the mother. In the hands of a skillful operator, the condition being satisfactory for the application of the forceps, a moderately frequent use of the instrument is to be recommended. Too little knowledge in the technic of the application of the forceps, and over-confidence in the safety of the abundant use of antiseptics, are responsible for many of the pelvic lesions following instrumental delivery. The abuse of the forceps will disappear to a great extent when medical students can obtain a sound practical training in obstetrics before they can present themselves for graduation, as is the case in the German universities. Although the student may not acquire any great degree of skill or dexterity during a brief residence in a maternity hospital, yet he would learn such important details as the position of the child's head and methods of pelvimetry which would prevent one frequent abuse of the forceps, viz., in contracted pelvis.

The Lancet, London.

July 23.

9 Bright's Disease and Its Varieties. John Rose Bradford.
10 Post-graduate Demonstration on Rheumatoid Arthritis. Charles J. Macalister.
11 One Hundred and Ten Cases of Total Enucleation of the Prostate for Radical Cure of Enlargement of that Organ. P. J. Freyer.
12 *Method of Closing an Abdominal Wound. John D. Malcolm.
13 Education of Visual Centers. W. Hamilton Hall.
14 *Radical Cure of Umbilical Hernia. B. G. A. Moynihan.
15 Case of Excision of the Cecum: Recovery. J. B. Footner.
16 Post-diphtheritic Chronic Bulbar Paralysis. Wilfred Harris.
17 Case of Wilful Introduction of Foreign Bodies Into the Esophagus; Death. J. H. Tagett and Stanley B. Atkinson.
18 Use of Phenylhydrazin in the Clinical Examination of Urine. W. H. Wilcox.
19 One Form of Suppurative Appendicitis. Arthur C. Roper.
20 *Abdominal Pain of Intestinal Origin. Frederick Holme Wiggin.

12. **Method of Closing Abdominal Wound.**—Malcolm describes a method he has employed for some years in operating for the cure of herniæ in abdominal scars. He avoids the middle line and cuts down on the rectus muscle, dividing it with his fingers, using the knife only if one of its tendenous intersections has to be divided. The first ligatures are passed in through one side of the incision and out through the other side, with an interval of one or two inches between—nearer if the abdominal wall is thin, and further if there is much fat. In order to approximate like tissues, the sutures must enter near the skin edge and pass deeply into the structures of the abdominal wall so as to describe a semicircle before being brought out close to the edge of the peritoneum; a similar deep grip of the structures is taken on the other side from within outward.

14. **Radical Cure of Umbilical Hernia.**—Moynihan believes that the operation devised by Mayo surpasses all others and achieves a veritable "radical cure."

20.—See abstract in THE JOURNAL, xlii, p. 484.

Bulletin de l'Académie de Médecine, Paris.

Last indexed page 287.

21 (LXVIII, No. 25.) Cure of Neuralgia by Electrolytic Treatment with Morphin Ions and with Quinin Ions. S. Leduc (Nantes).—Abstract.
22 *Treatment of Tuberculosis by Intra-tracheal Injections. Mendel. Abstract.
23 Action analgésiante et névrosthénique du radium à doses infinitésimales et inoffensives. Darier.
24 *Application de l'hygiène à l'enseignement (to pedagogics). Mme. Kachperov-Macaigne.
25 L'action hypertensive ou hypotensive des bains carbo-gazeux suivant leurs modes d'emploi (carbonated baths). Laussedat.
26 *La tuberculose ganglio-pulmonaire dans l'école parisienne (in Paris schools). Grancher.

22. **Intra-Tracheal Injections in Treatment of Tuberculosis.**—Mendel reports that fully half of 100 patients in various stages of tuberculosis were remarkably improved with intra-tracheal injections of 6 to 9 c.c. of eucalyptol in an oil vehicle. The technic is so simple that no special experience or skill is required, and the patients all submitted willingly to the injections.

24. **Hygiene Culture; Application of Hygiene to Pedagogics.**—This communication was read at the meeting of the Académie on May 31, the first time in its history that a woman was given the privilege of the floor. Mme. Macaigne applies the term "hygiene-culture" to the new method of pedagogics which she advocates. Its principle is that the child from the first should be taught that the aim of all human culture is to be useful to others, and that the foundation for this culture is the development of the two principal faculties of the human being, goodness, which impels us to wish well to our neighbor, and intelligence, which teaches us how to be useful to him. History, literature, philosophy, should all be taught on an entirely different basis from that at present employed; the evolution of peoples toward progress and goodness should be the points insisted on. The main idea throughout the entire education of the child and youth should be that his studies are for the purpose of perfecting and augmenting his usefulness to the world at large. Mme. Macaigne has made an attempt to carry out some of her ideas in several of the Paris primary schools during the last two years, with gratifying results. She insists that the true rôle of the physician is to form a new science of living, which will result in a rational cultivation of the human being as we cultivate plants to derive the finest fruits from them. No living creature, she says, receives such unsystematic and capricious, whimsical care as the human being. The cultivation of the child, both in respect to its physical functions and the development of its mind, is not based on rational laws to produce the best results for the individual and for society. We need a science of living, and it is to medicine, which possesses in hygiene the rules of healthy living, that the world looks to guide it toward this science.

26. **Glandular-Pulmonary Tuberculosis in the School Children of Paris.**—Grancher, assisted by a dozen of his present or former pupils, has been making a careful examination of all the school children in a certain Paris ward. They found that out of 896 children 141 were affected with latent but unmistakable ganglio-pulmonary tuberculosis. This is a proportion of 14 per cent. of 438 boys, and 17 per cent. of 458 girls. The mere "suspects" are not included in these figures. If they were, the figure 141 might possibly have to be doubled or trebled. Application was made to the authorities and cod-liver oil and meat powder were supplied for some of the affected children, while others were transferred to a children's sanatorium. Grancher makes an earnest appeal that schools should be established in the country for these latent tuberculous cases, where the children can grow up healthy in country air. The total number in the schools of Paris must be in the neighborhood of 20,000 to 25,000, judging from the proportions already ascertained. If boarding schools in the country are an unattainable ideal for these city children, he suggests that they might at least be boarded out in farmers' families and attend the village schools. [Kerley (THE JOURNAL, July 9, 1904), has recently suggested that one of the factors in the healthiness of children brought up in the country is that the articles of food are made at home. The baker and the corner grocery are at too great a distance to be available.—ED.]

Beitrage zur klin. Chirurgie (von Bruns), Tubingen.

Last indexed XLII, pages 985 and 1524.

27 (XLI, No. 2.) *Meniscus-Luxation des Knie-Gelenkes. C. Schlatter (Zurich).
28 *Ueber Leucocyten Zählungen und deren Verwertbarkeit bei chirurgischen Affektionen. A. Reich (Tübingen).
29 Zur Kasuistik und operativen Behandlung der Bauchhöhlen-Teratome (of abdominal cavity). E. Bayer (Prague).
30 Sweat Gland Tumors. O. Klauber (Prague).—Schweissdrüsentumoren.
31 *Genu recurvatum osteomyeliticum. J. Kisch (Prague).
32 *Ueber 828 operativ behandelte Hernien. H. Hilgenreiner.
33 *Ueber retroperitoneale Lage der Milz (displacement of spleen). E. Ehrich (Rostock).
34 *Aneurysma der Subclavia. Oberst (Freiburg).
35 Ueber die Abscesse des Spatium prevesicale (Retzii) B. Honsell (Tübingen).

27. **Dislocation of the Semilunar Cartilage of the Knee.**—Schlatter adds 5 cases from Krönlein's clinic to those found in the literature, bringing to 62 the number of known instances of dislocation of the semilunar cartilage of the knee. All but 17 were dislocations of the internal meniscus. The luxation is always due to rupture of some kind, and it may

be suspected when there is sudden pain, resistance developing in the cleft in the joint and swelling of the joint capsule. Contrary to von Bruns' experience, he found that the cartilage protruded more frequently during flexion while it disappeared in extension. The results were invariably fine in every case after operative intervention, although all had been long treated in vain by other measures. In some rare cases, however, some trivial disturbance in the function of the joint developed in the course of years, slight atrophy of the muscle or limitation of extension.

28. **Leucocyte Count in Surgical Affections.**—Reich's statements are based on examination of 138 cases of inflammation of cellular tissue, 24 of osteomyelitis and a large number of appendicitis and other serious inflammations in serous membranes. When the leucocyte count stands at 20,000 for three or more days or constantly rises, a progressive suppuration may be assumed. Diffuse peritonitis may be suspected when the leucocyte count decreases and the general condition grows worse in case of an existing intra-abdominal suppuration, even when there are no other manifest clinical signs of the peritonitis. His observations indicate that a high leucocyte count testifies rather against the presence of tuberculosis. After trauma or operation the leucocyte count rises abruptly in the course of six to eighteen hours to a maximum of 16,000, and gradually returns to normal at latest in seventy-two to seventy-eight hours. He noted also this post-operative, non-septic leucocytosis after strumectomies, in which case it was in striking contrast to the high or constantly rising temperature curve. The objection to this diagnostic measure is that several counts may be necessary for a decisive result, and this may delay the operation too long.

31. **Osteomyelitic Genu Recurvatum.**—Kisch describes 2 cases, both in 18-year-old patients. The epiphysis was forcibly liberated in the first case without the use of the knife, but this intervention induced fat embolism, rapidly fatal. The danger of this should deter from bloodless reposition, he thinks, and advocates, instead, linear osteotomy at the point of the deformity, with extension and the covering of the cleft in the bone with the patella taken up in a flap comprising both skin and bone.

32. **Wolfler's Method of Treating Hernia.**—Hilgenreiner's communication has already been editorially mentioned in THE JOURNAL, page 1421 of the last volume. The proportion of recurrences in the 828 cases operated on has been 7.3 per cent. This compares favorably with the Bassini operation at Albert's clinic with 7.5 per cent. recurrences. The Wölfler technic is described in full. It requires only twenty to twenty-five minutes and healing is complete on an average in 14.4 days. Healing was by primary intention in all but .8 per cent. during the last two years. The advantages over the Bassini are the avoidance of complications from traction on the spermatic cord. The herniotomy is generally done with local anesthesia alone.

33. **Retroperitoneal Displacement of the Spleen.**—A case is described in which serious symptoms were observed, attributed to an incarcerated wandering kidney. Fixation of the spleen in its place banished all the symptoms. Splenopexy, therefore, is sufficient in such cases and it is not necessary to remove the organ even in case of threatening symptoms.

34. **Aneurism of the Subclavian.**—Oberst reports a case from Kraske's clinic which brings the number on record to 188. Study of this material impels him to the conclusion that central compression is the best non-operative treatment, and central ligature the most promising operative measure. The results of peripheral ligation are uncertain, and extirpation is practicable only under remarkably favorable conditions. Resection of the clavicle should always be done whenever necessary.

Centralblatt f. Chirurgie, Leipsic.

Last indexed page 288.

36 (XXXI. No. 24.) *Application of Elastic Band in Changing Dressings of Wounds on the Limbs. L. Isnardi (Turin).—Die Anwendung der elastischen Binde beim Wechsel des Verbandes von Gliederwunden.

37 *Simple Method of Lifting Sunken-in Nostrils. S. Kofmann (Odessa).—Eine einfache Methode des Wiederaufrichtens der eingesunkenen Nasenflügel.

38 (No. 25.) *Ueber plastische Wander-Lappen (migrating flaps). Steinthal (Stuttgart).

39 (No. 26.) First Dressing on Battlefield. W. J. van Stockum Der erste Verband auf dem Schlachtfelde.

40 *Turning Back Costal Arch on Account of Impermeable Cicatricial Stricture of the Esophagus. W. Meyer (New York) Aufklappen des Rippenbogens wegen undurchgängiger Narbenstriktur der Speiseröhre.

36. **Constriction of Limb as Aid in Changing Dressings.**—The danger of hemorrhage and all inconveniences of changing the dressings on a limb are obviated by applying an elastic band to constrict the limb above the wound. Isnardi has been utilizing this simple measure during the last two years, and announces that its advantages are obvious and manifold. The blood pressure in the parts is reduced to zero and the blood vessels are emptied by the anemia induced. This not only prevents hemorrhage, but protects the delicate granulation tissue from injury. He has used the Esmarch bandage or ordinary rubber tube, but has found a tube like that used in the Riva Rocci sphygmomanometer the best adapted for the purpose, as also for operations on a limb. He applies the tube in a linen cover which can be sterilized. The chief advantage of this tube is that it can be inflated and flattened out at any moment, without removing it from the limb, thus allowing the blood pressure to be shut off or restored without the trouble of removing the tube. This is frequently an advantage in operating.

37. **Restoration of Sunken-in Nostrils.**—Kofmann gives illustrations of a patient to show the benefit derived by his method of paraffin prothesis supplemented by slitting the cicatricial tissue in the nostril intracutaneously, and then proceeding to progressive dilatation of the nostril with gauze tampons.

38. **Plastic "Wandering Flaps."**—Steinthal was called on to supply a covering for a loss of substance on the right leg, involving the knee and back of the leg. The patient was a girl of 5 who had been run over by a wagon. The defect was too extensive to be covered by a flap from the other leg and he found it impossible to apply a pedunculated flap from the trunk in such a way as to fit it over the defect, as it was principally on the rear aspect of the limb. He overcame these difficulties by taking a pedunculated flap from the left side of the trunk and inserting its free end in a gaping incision along the inner margin of the tibia in the sound leg, which was flexed and fastened against the trunk for the purpose. The flap grew in the incision and its attachment to the trunk was severed the eleventh day, after which it was an easy matter to cover the defect with the transplanted flap hanging from the sound leg like an apron. The flap was originally 10 by 17 cm. in size, and the final healing was excellent, preserving the knee region from functional disturbances. The healing was delayed by the fact that the granulations of the wound had become infected, and two months elapsed before the granulations became healthy and the flap took root. After this it healed rapidly and could be severed from the other leg in twelve days and sutured finally in place five days later.

40. **Costal Arch in Turned-Back Flap for Access to Esophagus.**—A case is described and illustrated to show the peculiar advantages of surgical intervention on the lower part of the esophagus through an incision shaped like a flaring U, extending from the junction of the seventh costal cartilage with the sternum downward and up through the cartilages of the seventh to the tenth ribs at their junction with the latter, thus including the cartilaginous portion of the costal arch in the flap which was readily turned far back, freely exposing the diaphragm and allowing the esophagus to be drawn down into view. Meyer is convinced that this incision would facilitate resection of the stomach or any intervention on organs in the vault of the diaphragm.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed page 288.

41 (XXVIII. No. 16.) Calculation of Size of Conjugata vera from Conj. diagonalis. Krönig (Jena).—Die Berechnung der Grösse der Con. vera aus der Conj. diag.

42 Eine modifizierte Kugelzange (ball forceps). O. Frankl.

43 Zur Technik der gynäkologischen Heissluftbehandlung (treatment with superheated air). Ibid.